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ORIGINAL ARTICLES.

MENTAL IMPROVEMENT FOLLOWING OPERATION ON THE SKULL.

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BRAIN-SURGERY, though still in its infancy, is rapidly advancing. The conditions under which the skull should be opened for the purpose of removing morbid states are being determined more and more accurately, especially by such careful and experienced men as Von Bergmann,¹ Horsley,² and Macewen,³ and the field of usefulness for such operations as the enucleation of tumors, the emptying of cerebral abscesses, and the destruction of irritating foci in the cortical motor area is becoming limited more strictly, as we understand better the indications that alone should justify us in attempting such hazardous procedures as the introduction of the surgeon's knife into the encephalon. Although we have learned to look upon these operations as by no means free from danger, and while many surgeons have published their successful as well as their fatal cases,⁴ comparatively little attention has been paid—and that little but recently—to one important subject, viz.: the consideration of the possibility of altering and improving psychic disturbances; to influence, therefore, the highest function of the brain, the mental sphere, by operations on the encephalon itself. What has been done in that respect has consisted mainly in the

resection of the skull, when the latter seemed to be an obstacle to the normal development of the convolutions beneath it, or in the cutting away of diseased cortical tissue.

Especially in cases in which too early ossification of the skull caused a retardation in the physiologic growth of cortical tissue, or in which the too rapid closure of the anterior fontanel had given rise to microcephalic conditions, or in which the apparent malformation of the bony enclosure of the brain was thought to be responsible for idiotic and similar morbid states, have operations been performed with more or less success.

Here again may be mentioned a number of skillful operators who have contributed to the literature of the subject.¹

Attempts have also been made to restore the mental equilibrium when, in consequence of chronic hemorrhagic pachymeningitis, localized accumulations of blood seemed to have caused dementia. As Von Bergmann² reports, Ceci³ at a meeting of Italian surgeons first recommended operative interference in these cases, while Huguemin⁴ has tried to prove that the pachymeningitic changes often met with in dementia paralytica (non-specifica?) are due to primary subdural hemorrhages. In this connection Keen's article on "Intra-cranial Lesions"⁵ is of special interest, as it determines the main diagnostic points and the indications and contraindications of operative interference and mentions the results to be expected from the latter.

It is the locality, the exact seat of the morbid lesion, which is of importance in all pathologic states concerning the encephalon or its bony enclosure, and here the gray cortical tissue plays a far weightier role than the white matter, as it has been found that certain impressions and impulses of which the conducting tracts were destroyed, selected new paths along which to travel. Every part, however, of the cortex has its definite function and can neither be gradually encroached upon nor be

¹ Ernst von Bergmann, Die chirurg. Behandl. der Hirnkrankh. Berlin, 1889.

² Horsley, Brit. Med. Journ., 1887, vol. i, April.

³ Macewen, Brit. Med. Journ., 1889, vol. ii; 1888, vol. i.

⁴ Jastrowitz, Deutsch. med. Wochenschr., 1888; W. W. Keen, Am. Journ. of the Med. Sci., Oct., 1888; idem, Oct. and Nov., 1889; idem, THE MEDICAL NEWS, 1890; idem, THE MEDICAL NEWS and Am. Journ. Med. Sci., 1891; v. Bergmann, Lehre v. d. Kopfverletz., 2. Aufl., 1880; Park, N. Y. Med. Journ., Nov. 3, 10, and 17, 1890; Seydel, Antiseptik und Tropenat, München, 1886; Hammond, THE MEDICAL NEWS, 1887; Heath, Lancet, April, 1890; Weir and Seguin, Am. Journ. Med. Sci., 1888; Bennett, Lancet, vol. ii, 1886; Birdsall, THE MEDICAL NEWS, 1887; and especially Horsley and Macewen, loc. cit.; also Bennett, Lancet, May, 1889; Ceci e Onetti, Asesso intracranico, etc.; Barker, Brit. Med. Journ., 1888, vol. i; Drummond, Lancet, 1887; Sitzungsbericht des letzten med. Congress in Berlin, 1891; Keen, W. W., "Craniectomy for Microcephalus," THE MEDICAL NEWS, April 12, 1890; idem, reprint, Nov. 19, 1890; idem, "Jacksonian Epilepsy," Am. Journ. Med. Sci., Dec. 1891.

⁵ Keen, Horsley, Macewen, v. Bergmann, loc. cit. and elsewhere; Volkmann, Beitr., Leipzig; Muhr, Archiv. f. Psych., 1890; Wiessmann, Deutsche Zeitschr. f. Chirurgie, 1884; Langenbuch, Berl. klin. Wochenschr., 1889.

² Von Bergmann, Die chirurg. Behandl. der Hirnkrankh.

³ Ceci, "Empires progr. sinistra, etc.," Com. al Congresso della Soc. Ital. de Chir., held in Geneva, 1887.

⁴ Huguemin, referred to by v. Bergmann, loc. cit.

⁵ W. W. Keen, "Intra-cranial Lesions," reprint, vol. vii Trans. N. Y. Med. Assoc., 1890.

suddenly destroyed or injured with impunity. Cases in which the diseased cortical motor area has been excised without giving rise to permanent palsies are no proofs to the contrary, and do not belong to this category; if anything, the transient paralysis resulting from such excision is in favor of the facts stated. For in these cases the same convolutions on the opposite, non-affected side, or more deeply-situated cells on the side of the lesion, assume the functions of the parts destroyed. Here the healthy centers, during the duration of the disease, have gradually become accustomed to perform the functions of the portions attacked by the morbid lesion.

Probably the convolutions on the right side exactly in a situation corresponding with those on the left side in right-handed persons in which the complicated speech-apparatus has its center (lower left third, Broca's, island of Reil) receive the same impressions as those active in the opposite hemisphere, but more feebly, and their associated connection with all other will-centers is not so intimate, but becomes gradually developed, as those in the left frontal lobe more and more fail to perform their duties, yet never in so high a degree. In this we find an explanation of the return of articulated language—though not a perfect or complete restoration—when hemorrhage destroys the speech-centers on the left side.

The functions of many convolutions are known, but what those of the frontal lobes are—excepting those mentioned—we can only conjecture. It is in these gyri that abstract ideas are formed. Here reside the centers of the highest intelligence; here thoughts originate. What we call quick perception, genius, talent, poetic feeling, narrow-mindedness, immoral character—all these dwell here. And here also is the only region in which Nature has made such an arrangement in the bony enclosure as to allow for more space, should such become necessary in later life, when the skull has already become a solid, unyielding whole. In the frontal sinus over each eye the laminæ are thinner; they may give way, and not only may the hollow spaces be encroached upon, but the outer skull may be even driven outward. What are called "bumps of knowledge" always receive their fullest development and final shape between the twenty-fifth and thirty-fifth year, and when genuine, they are observed to be especially prominent only in persons of a high order of intelligence and possessing a quick perception. And though not invariably specially large, I have always noted them in autodidacts, in whom earlier education had been neglected, but who finally overcame all obstacles and acquired considerable learning, principally from books.

Further discussion would lead us too far, but we

may say that slight alterations in the gyri of the frontal lobes, whether in the upper gray layers of cells or in those lower down, nearer the white matter, a very little pressure upon them, or some immovable resistance offered to their development, will often produce serious consequences in that quarter and create mental disturbances. The following case gave rise to these reflections.

Robert B., fourteen years old, was brought to my clinic May 25, 1891. The family history showed no taint, and no organic disease existed. The boy was healthy and vigorous and mentally bright until his sixth year, when he was seized with convulsions. There was no gradual transition from *petit* to *grand mal*. Without any discoverable cause, the attacks began one day at the period of his life referred to, and have since never ceased for any length of time. Sometimes they were milder, *i. e.*, the clonic spasms were not so severe; at other times the seizures were very violent. While he had met with a number of accidents, due to the fits, and while his head and face showed many a scar, old and recent, deep and superficial, the many injuries he received had no causal connection with his disease, which preceded all accidents.

He first had only one attack in two weeks, then one a week, then several in that time, then one daily, and finally from four to ten every day; occasionally many more, as many as twenty-one in the twenty-four hours, and especially during the last two years they had greatly increased in severity and also occurred with frequency during sleep.

The starting movement, simultaneously with the suddenly developing unconsciousness, generally consisted in an extreme rigidity of both arms, which were forcibly extended and stretched out in front of him. Sometimes one arm first became stiff, the next time the other, but there was no regularity in this, the right and left arm changing about in the most hap-hazard manner. The hands were mostly clinched, but now and then the fingers were extended and as rigid as the arms. The movements, however, invariably commenced in the upper extremities, and their sudden rigidity always ushered in the seizure, which otherwise did not differ from ordinary violent attacks of *epilepsia gravior*.

But the most interesting point in the case was the following: Statistics have shown that one-half of all epileptics enjoy the best of health and are remarkable for their bright intellect.¹ Because of the frequency with which even Herculean build and unimpaired mental faculties are found to be associated with the severest forms of *grand mal*, the disease *eo ipso* is not looked upon as a destroyer of memory, an impaire of intellect, and an underminer of physical vigor. On the contrary, when such disturbances occur in the course of the "falling sickness" they are to be ascribed to other factors. The same lesion that causes *petit* or *grand mal* may also be responsible for the complications of epilepsy. And we may make this statement, as im-

¹ Nothnagel, art. "Epilepsy," in Ziemssen's Cyclopaedia, vol. xiv, p. 253 et seq.

portant from a diagnostic standpoint: If the symptoms (loss of memory, slow perception, retarded mental development, idiocy, dementia, failing health, general debility, etc.) accompany the epileptic malady from its commencement and slowly become more and more apparent, they are complications, and one pathogenic cause produces both; but if these phenomena show themselves only after the "falling sickness" has lasted some time, they are sequelæ and due to the epilepsy.

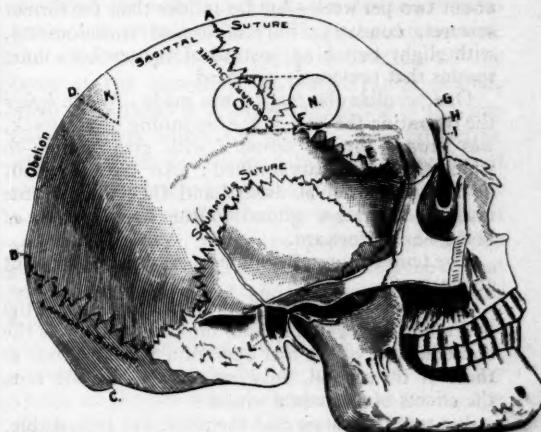
Until the time of the commencement of the convulsions Robert's intellect was of a higher order than is usually met with in children of his class—his father being a laborer. But with the occurrence of the convulsions a great change began simultaneously in the mental sphere. He became dull and vicious, and long before the fits had become very severe and numerous his intellect was clouded, until he finally seemed simple and almost idiotic, and at times became maniacal.

When I first saw him the expression of his face denoted imbecility and low cunning; a vulgar leer was in his eyes, which otherwise always looked at the ground as if dreading punishment; he glanced in a peculiarly shy manner at everyone; the movements of his facial muscles were heavy, sluggish, and vulgar in the extreme. Several times in a day he broke out into a kind of maniacal behavior, when he used the vilest language, destroyed articles of furniture, and hit his mother. Upon being remonstrated with he put out his tongue and acted like a hardened criminal. There always was a sinister expression of the face; his walk was heavy and clumsy, like that of a big man, qualities which characterized also his speech.

One glance by a careful observer sufficed to recognize a peculiar conformation of his skull. It seemed as if the latter, at the upper central part of the frontal and the upper anterior third of each parietal bone, while soft, had been crushed in by some weight, and as if the same force had pressed the two parietal bones in front closer together—this changed formation of the skull continuing until ossification had been complete. The skull, besides, was also far more massive than, considering the age of the boy, it should have been. I have never seen a case that thus impressed me with the fact that a premature closure of the anterior fontanel, a too rapid bony union at the sagittal and coronary sutures, and a too early and too rapid morbid formation of the bone had prevented the normal development—the expansion—of the cortical layers of the anterior lobes and of the upper and anterior portion of the parietal lobes, as happened in this boy's case. The mental development had been arrested and had been forced to sink below the usual level of that met with in the human being at the age of eight years—the boy then being fourteen.

Excepting his being endowed with speech—and of this he made, as indicated, but a clumsy use, so that it sounded more like a grunting, and wanted all modulations of voice and accent, often resembling the snapping and growling of an angry animal—he seemed to be a savage young monkey rather than a boy.

Under a systematic use of the bromides the convulsions greatly diminished in severity and frequency, without there being the slightest change noticeable in the mental sphere. Though we had no hope of improving the epilepsy, Dr. John H. Packard, whom I consulted because of his great experience in all kinds of injuries and operations concerning the skull, agreed with me that the bony impediment to the expansion of the brain should be removed, and as most cases in which both sides of the skull had been operated upon at once had terminated fatally, we concluded to resect first on one, and at a later time on the other side.



- A. Bregma, where coronary meets sagittal suture.
- B. Lambda, where lambdoid meets sagittal suture.
- C. Inion, most prominent point at base of occipital bone.
- D. A point half an inch behind the center of line drawn from H to I; an angle (K) of 69° to 70° , one leg of which is formed by the sagittal suture, drawn from D, will have its other leg pass in the direction of the fissure of Rolando, directly beneath it.
- E. Oterion, point of crossing of coronary and squamous sutures.
- F. Stephanion, point of crossing of coronary suture and temporal ridge.
- G. Ophrion.
- H. Glabella.
- I. Nasion.
- K. Angle of 69° to 70° , referred to at D.
- L. Meatus auditorius externus.
- O—N. Piece of skull resected.

Both operations were performed at St. Joseph's Hospital (the first August 10, 1891, and the second November 17, 1891) by Dr. John H. Packard, assisted by the resident physicians, Drs. José Samaniego and W. R. Parker. The accompanying drawings will show the pieces of bone, O—N, removed on each side. The bone was more than twice as thick as it should have been and of a calcareous nature; there seemed but little animal tissue in it. To the touch it gave the feeling as of hardened mortar to which much chalk had been added, and of the smooth, hard laminae there was no trace.

Drs. Parker and Samaniego made the following report, which though condensed to elucidate only the important data, yet shows the progress of the case after the operations:

When Robert B. entered, August 3, 1891, the hospital, he was very unmanageable, having to be carried to the ward and made to stay there by the employment of force and of the most vigorous measures. His language and actions toward his parents and attendants were shocking in the extreme. During the weeks preceding the first operation he had many attacks a day, five of which always were very severe, *lasting from thirty to sixty minutes*. The wounds after both operations remained perfectly aseptic, and the patient each time made a rapid recovery. For five weeks after the first and for two weeks after the second operation he had no attacks; after that he had one a day—at present about two per week—but far milder than the former seizures, consisting only of loss of consciousness, with slight twitchings instead of the terrible clonic spasms that previously occurred.

One peculiar observation was made: While before the operation the boy, at the beginning of an attack, was always thrown *forward* with great force—to which the many scars testified; *after* the operation, he invariably fell *backward* and the violent force ceased; he rather glided to the floor instead of being hurled forward.

The temperature after both operations never went above 100°.

We now come to the main point, the result of the operations as regards mental improvement. As the consequences of the first operation were the same as those of the second, only less marked, we will note the effects of both as a whole.

We may truly state that the result was remarkable, and exceeded our most sanguine hopes. From an idiotic, sulking, and savage individual, given to maniacal outbreaks and evidently utterly wanting in all finer feelings, Robert changed to a bright, lively, and good-natured boy, with eyes beaming with pleasure and gratitude. What first attracted attention, and was especially noticeable a few weeks after the second resection of bone, was the complete disappearance of the constant frown and of the scowl that had been habitual with him, and the frank and open look with which he greeted his physicians. There now was a smile on his face; he no longer had his sight riveted to the floor when questioned, but directed it straight at the speaker, and his eyes wore a happy expression. All his former irritability and morose temper had vanished as if by magic; every act of his evinced good-nature, and he enjoyed a joke and himself tried to practise one on others, instead of being bent only on mischief and endeavoring only to injure others. When the hand was offered him he shook it heartily, while formerly he did not seem to comprehend what hand-shaking meant. To all inquiries he made intelligent replies, and it was plainly to be noticed that he tried his best to please; one could observe his earnest efforts to describe his symptoms, while before the operation his custom had been to sulk, so that no information whatever could be gleaned from him.

I have mentioned his peculiar, clumsy walk, which resembled more the step of a young elephant than that of a boy. The first time that I saw him in the hospital out of bed, about three weeks after the

second operation, he was just running up a flight of stairs, skipping two or three at each jump, and he appeared as active and agile as any other lively boy at his age, and to enjoy life just as much, while previously his very existence seemed to be a burden to him.

Of great importance was this observation. While he had become bright and intelligent, the very opposite of what had once characterized him, his gaiety, the plays and occupations he liked best, belonged more to a boy six years his junior. In reporting his general mental state, while attending him at the clinic, I took occasion to note that his actions were those of a man forty years old; after the obstacle to the expansion of the gray cortical tissue of the brain had been removed, all heaviness and clumsiness seemed to cease at once as if by a miracle; every motion, the play of his features included, became active and quick, but his whole behavior was that of a boy eight years old—as if the brain had been able to develop up to that age and had then remained stationary under a cloud, as it were, until with the removal of the impediment the brain again began to make further progress, starting where it had left off. He now expressed a wish to go to school, while previously the family could not force him to go thither. His perception quickened, and, in a few words, it was the greatest change that I have ever known to occur in the mental state of any individual, and not only the most marked but also the most sudden.

The convulsions he now has, reduced under treatment with argenti nitras to from one to two a week—some weeks of late none—are almost of the nature of *petit mal*; there is no longer any force in the seizures, and a few twitchings constitute the whole clonic element of the attack, while the tonic rigidity formerly present is completely absent.

If the cases are carefully selected a wide field is opened to cerebral surgery. But we should cease trephining unless—(1) there is evidence of depressed bone as the consequence of an injury, or (2) there is malformation, or (3) there is proof of too early ossification. In other words, unless we know that the pressure of the bony enclosure causes the epileptoid seizures, trephining and linear craniotomy (two trephine openings and the removal of the intervening piece of bone or resection of a part of the skull performed in no matter what way) should not be resorted to. We may also call attention to the fact that after such an operation the fits are likely to remain away for from one to six weeks, when they will return, and that this happens even in cases in which linear craniotomy was not indicated at all and is bound to prove useless. Such cases ought, therefore, not to be reported until several months have passed by after the operation. In most cases, besides the resection, the cortical layers responsible for the attacks must be cut away—a very difficult procedure, because of the great skill and experience (and these often do not

suffice) needed to exactly locate the seat of the irritating focus. There also is a great difference, as concerns the danger of the operation, between simple resection of bone and penetrating through the dura into the cavity of the skull.

A careful search for lesions, as in Robert B.'s case, should always be instituted when the mental impairment began simultaneously with the outbreak of the epileptic disease, when we have evidence, therefore, that the same morbid cause within the encephalon is responsible for the deterioration of the intellect and for the convulsive seizures. And this happens most frequently in cases of microcephalus due to the narrow limits of the cavity of the skull, in which the brain needs more space for its normal development.

THE MECHANISM OF IMMUNITY, WITH ITS CLINICAL LESSONS.

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IN THE MEDICAL News of February 2, 1889, in discussing the immunity conferred by an attack of a self-limited parasitic disease, I said: "It occurs to me that the *causes* which give to these diseases the characteristic of self-limitation and check their progress must be the same that give the after-immunity. . . . These self-limited diseases are therefore terminated by the acquisition of a temporary immunity on the part of the patient, which continues for a longer or shorter time protecting him against future attacks." Dr. Charles Bouchard, in a paper read before the Tenth Internal Med. Congress, Berlin, 1890, gave expression to the same idea in almost the same words. He said, "The cure is the first manifestation of the acquired immunity." If this proposition, which seems almost axiomatic, be true, then it follows that all self-limited parasitic diseases confer immunity, and conversely, parasitic diseases not self-limited do not confer immunity. This conclusion is a portion of the *Law of Immunity* that I published¹ in 1889. This law, I yet believe, in the light of recent investigations, approaches as near the truth as any condensed statement at present can. It is as follows: "All self-limited parasitic diseases confer immunity, and the completeness and the length of the period of the immunity will be in direct proportion to the severity of the constitutional symptoms of the attack which conferred the immunity." I was led to formulate this law by the study of two self-limited diseases, which were thought by many able clinicians to give predisposition to, rather than immunity from future attacks, viz., erysipelas and diphtheria. In

the papers referred to I have given a portion of the evidence and argument that convinced me that both of these diseases conform with the law mentioned.

The idea, as expressed in the law, is that a severe attack of a self-limited parasitic disease gives at least complete temporary immunity, but it does not fix the time that this acquired immunity may last; this period varies greatly in different diseases and is not subject to any general law. As to period, the law only comprehends the idea that the complete temporary immunity resulting from a severe attack of any of the self-limited parasitic diseases remains a complete protection for a longer or shorter time and after this affords a partial protection till the cause of the immunity has entirely disappeared, when the animal is again as susceptible to the disease as it was before the attack. The protection afforded by acquired immunity, after the period of complete immunity has passed, may be likened to a cone—this cone of immunity tapering to a point as time goes on; when the point is reached no protection remains, but previously to this the animal was partially protected and susceptible to milder attacks of the disease, the severity of these modified attacks depending on the size of the cone of immunity at the date of the attack—or in other words, on the nearness of the second attack to the attack that conferred the immunity. The further removed the second attack is from the first, the more severe it will be, that is within the limits of the immunity-period. After this period has expired, time does not increase the severity of the second attack.

This law, I think, will be of value as a working hypothesis in the field of experimental clinical medicine. But that we may understand the application of the principles underlying this law to the study of clinical medicine, it will first be necessary for us to inquire more closely into the nature of parasitic diseases, and the *causes* that give to them the characteristic of self-limitation.

At present, it is everywhere believed that in all parasitic diseases there is an antagonism between the parasites and the cells of the animal attacked, and that this warfare between the cells and the parasites and the resulting changes caused thereby represent the essential pathologic process in all mycotic diseases.

In the publication of 1889, referred to, I expressed the opinion that this contest was an extra-cellular one, and I then offered the following modification of the Metschnikoff theory as the best explanation of the nature of this process.

1. There is an uncompromising warfare waged by the cellular elements of the body against the invading bacteria.
2. The destructive influence of the bacteria is

¹ Cincinnati Lancet and Clinic, April 29, 1889, p. 630.

exerted chiefly if not exclusively through the agency of chemical poisons.

3. The cells in like manner exert their destructive influence through the agency of chemical products that are formed by reason of the increased biologic activity of the cells. This function of the cells is called into activity by the action upon them of the chemical products produced by the bacteria—a function called forth in self-defence.

4. This contest between bacteria and cells occurs outside and not inside the protoplasm of the cells.

5. When the cells, through the agency of chemical poisons, kill the bacteria, the "phagocytes" dispose of the dead. When the bacteria, by chemical products, destroy the cells, the former likewise feast upon the dead cells.

The foregoing theory, which I expressed three years ago, is in accord with the recent brilliant experimental work¹ that has added so much to our knowledge of the parasitic diseases. And in the argument that follows I have assumed that this theory comprehends the important principles underlying our present knowledge of these diseases.

In the study of acquired immunity we are interested in this intercellular contest only when the victory is obtained by the cells. The pathogenic bacteria gain entrance into the body and not only live there but also do more or less harm with the special poisons that they produce in the struggle with the cells for existence. The cells, on their part, are making every effort to destroy or render harmless the intruding bacteria. This they do by producing chemical substances, which have a destructive influence on either the bacteria or their products. This contest between cells and bacteria is one that knows no truce. It is a war of extermination. Both use similar weapons, viz., chemical substances, which are produced for the occasion. After a time the cells obtain the advantage, and the bacteria and their products are destroyed. This victory is by reason of the fact that the cells are able to secrete a substance that is more detrimental to the life and functions of the bacteria, than is the substance secreted by the bacteria to the life and function of the cells. With the victory of the cells the disease subsides and immunity begins. Upon what does this cure of the disease and the after-immunity depend? The answer is plain: Upon the superior functional activity of the cells. The cells in this contest have acquired a certain impressibility, a power to act and readiness for

action, which enables them to respond so quickly and energetically that they can protect themselves against future attacks of the same bacteria. Or, as I expressed it in the article referred to, acquired immunity is due to a cell-function acquired during the intercellular contest between the cells and the invading bacteria.

While this increased cell-function is the prime factor in conferring on the animal immunity from subsequent attacks of the same disease, we must not fail to note the influence that chemical substances, retained in the body of an animal after an attack, may have in contributing to this result.

It is a fact well established by experimental research, that after certain of the acute infections¹ the body of the animal contains chemical substances that did not previously exist there, and which not only have the property of conferring immunity upon the animal in which they were developed, but also have a curative influence when injected into the body of another animal sick of the same disease. Not alone from these experiments, but from *a priori* facts, we conclude that after an attack of any of the self-limited parasitic diseases the body of the animal must contain a certain quantity of the chemical substance with which Nature (the cells) cured the disease, and this substance being present in a sufficient quantity to terminate the disease must be present in sufficient quantity to give present immunity. Retained chemical substances,² therefore, may confer immunity, but the immunity resulting from this cause will be more or less temporary, and will gradually disappear with the elimination of the chemical substances conferring the immunity, thus leaving the animal dependent on the cell-function spoken of for protection against future attacks of these diseases.

It is probable that this cell-function is called into action chiefly at the time when the tissues of the body are invaded by pathogenic bacteria, but it is also possible that under certain conditions, which we do not understand, this cell-function may be constantly exercised, producing the chemical germicides as rapidly as they are eliminated. The fact that the serum of the blood of certain animals that are naturally immune to a certain disease (for example, the rat to anthrax) has a bactericidal action on the germ of that disease, lends color to the belief that at least in natural immunity the cells of some animals may be constantly secreting the destroying germicide.

In order to avoid confusion and to better understand the relative importance of the two factors, cell-function and retained chemicals, which are

¹ For a review of this work the reader is referred to the paper of A. C. Abbott in THE MEDICAL NEWS, Nov. 7, 1891. Previously to the publication of Abbott's paper I had incorporated in this communication quotations from and references to recent experimental work that testify to the truth of this theory, but now in the interest of brevity and thoroughness I refer the reader to the paper referred to.

¹ See Abbott's paper, previously referred to.

² These substances act not alone as germicides, but also act by destroying the poisons produced by the "germs."

chiefly concerned in acquired immunity, we will study the question first in the general and then in the local parasitic diseases.

By *general parasitic diseases* we mean diseases such as tuberculosis, typhoid fever, measles, small-pox, etc., in which the bacteria causing the disease are not confined to any one part of the body, but are more or less generally distributed throughout the blood and tissues of the animal. Here the inter-cellular contest is a general one, and the cells in all parts of the body have their functional fighting-capacity alike developed. In this class of diseases the cell-function is the important factor in the after-immunity. The retained chemical germicides that are left in the body of the animal after an attack of the disease may of themselves be sufficient to explain complete temporary immunity, for a short time after the attack. But these substances will be gradually eliminated, and with their elimination the immunity that they confer will disappear. This will leave the animal in a comparatively short time protected against the disease *only* by the increased cell-function. The immunity resulting from this cell-function is more or less permanent, and is probably in some instances (in which one or both parents are immune) transmitted to the offspring. In this way, by natural selection, we may explain the origin of natural or inherited immunity. If immunity is, as we believe, dependent on the development of the functional fighting-capacity of the cells, then it would appear that a mild attack of one of the infections might only partially develop the cell-function, and therefore confer only partial immunity, leaving the animal yet susceptible to mild attacks of the same disease. Even though this be true, it would not follow that mild attacks of the acute infections always confer only partial immunity. This would follow if the difference in the severity of the attacks of these diseases always depended on a difference in the virulence of the contagion causing the disease; then the microbe with weak functional capacity for producing chemical poisons would be so easily destroyed by the cells that the cell-function of producing chemical germicides would be but feebly developed, and the animal, therefore, only partially protected against more virulent forms of the same disease. Protective inoculation with attenuated virus can, therefore, only give a partial protection against the more virulent forms of the same virus. This proposition, which is a logical conclusion from the foregoing argument, is amply supported by experimental investigation, which has shown that virus of increasing potencies must be injected into the body of an animal to confer complete immunity.

But, in the study of this difficult subject, we must remember that mild attacks are not always due to

an attenuated virus. They are, probably, more often due to a partial natural immunity dependent on an inherited or natural cell-function that enables the cells very quickly to terminate the disease. The susceptibility of different animals to disease, therefore, depends on the degree of this inherited cell-function. If the function is highly developed, the animal is immune; if feebly developed, the animal is very susceptible to the disease. A mild attack of one of the acute infections may increase the development of this cell-function to such a degree as to give complete immunity. For this reason, when mild attacks are due to a lessened susceptibility, and not to a weakened virus, they may confer complete immunity. But the completeness of the immunity resulting in animals of like susceptibility, will be in direct proportion to the severity of the constitutional symptoms of the attack that conferred the immunity.

In the *local parasitic diseases* the mechanism of immunity is not altogether the same as in the general parasitic diseases. By local parasitic diseases we mean such diseases as erysipelas, diphtheria, and pneumonia. The bacteria causing diseases of this class are not generally distributed through the blood and tissues of the animal, but are confined to one or more parts of the body, where they produce their characteristic poisons, which are carried by the bloodvessels and lymphatics to all parts of the body, in this way producing constitutional symptoms. Local parasitic diseases are self-limited, but not in the same sense that constitutional parasitic diseases are limited. For example, the life of the diphtheritic inflammation is about three or four days; after this time the membrane is dead, and the disease has terminated at that point; but it may spread to other points, as from tonsil to tonsil, and then to pharynx, nose, or larynx, in this way continuing the disease indefinitely. But it, nevertheless, has a definite course, and confers on the mucous membrane involved at least temporary immunity.

The intercellular contest in local diseases is confined more or less to the part affected. Cells in distant parts of the body are not stimulated to the same functional activity as are the cells of the part affected, and, therefore, do not acquire the same power to resist future attacks of the same bacteria as do the cells at the site of the contest. In such a contest only a small minority of the cells of the body have their functional fighting-capacity fully developed, and these are the cells that take part in the hand-to-hand conflict. The cells in other parts of the body have this function much more feebly developed. We have, therefore, a few cells that have the power of conferring complete, and a great many cells that have the power of conferring

partial immunity. This would all be very well if the cells conferring complete immunity always stood guard at the portals through which the germs usually enter, but such is not the case. The cells taking the most active part in the contest are phagocytes. These cells, after the fight is over, find their way through the lymphatics and bloodvessels to all parts of the body, thus leaving the animal, as far as the functional fighting-capacity of the cell is concerned, only partially protected. But the other factor, viz., retained chemical products, is, in the local diseases, of prime importance. After the conflict is over, the body must contain a considerable quantity of the chemical substance manufactured by the cells for destroying the bacteria, and the amount of this substance present would depend on the severity of the constitutional symptoms of the attack in which it was produced. A local disease, with severe constitutional symptoms, might, therefore, leave the body so saturated with the proper chemical germicide as to give complete immunity. The completeness of the immunity will here again be in direct proportion to the constitutional symptoms of the attack that conferred it.

It is evident that immunity conferred in this way will slowly disappear with the elimination of the chemical substances on which it depends, until after a time there remains only the partial protection afforded by the feebly developed cell-function described. But the protection afforded by this partially developed cell-function will probably explain why second and third attacks of the local parasitic diseases are usually less severe than the primary attack, even though a long interval of time has intervened.

In this paper I have tried to give my reasons for believing the following propositions :

1. All self-limited parasitic diseases confer immunity.
2. In the local parasitic diseases, the completeness of the immunity, and the length of the period of immunity, will be in direct proportion to the severity of the constitutional symptoms of the attack that conferred the immunity. In this class of diseases, retained chemical products produced by the cells are the chief factors in conferring the immunity.
3. In the general parasitic diseases *in animals of like susceptibility*, the completeness of the immunity and the length of the period of immunity will be in direct proportion to the severity of the attack that conferred the immunity. In this class of diseases, acquired cell-function is the chief factor in conferring the immunity. Immunity from this cause is more or less lasting.

If the mechanism of immunity as here presented be correct, we have an insight into the method by which Nature cures and protects from future attacks

of the parasitic diseases. In imitating Nature, experimental clinical medicine has a promising field opened for original work.

In the cure and prevention of disease the experimenter may use one of two substances :

1. The chemical substances produced by the cells.
2. The chemical substances produced by the bacteria.

Let us first note what results we may expect from the use of the chemical substances produced by the cells in curing the disease.

(a) By injecting these substances in sufficient quantity into the body of a healthy animal we would expect to confer complete temporary immunity to the particular bacterium that induced its formation. But this immunity would gradually disappear with the excretion of the cause on which it depended.

(b) By injecting this substance in sufficient quantities into the body of an animal sick of the disease, we would expect it to act as a true specific in the cure of the disease.

If, therefore, we could obtain these various chemical substances with which Nature cures the self-limited diseases, and with which she confers a temporary immunity against them, we would have the means not only of curing, but of preventing these diseases. These conclusions as to the therapeutic value of the chemical substances left in the body of an animal after an attack of a self-limited disease are logical inferences from the theory of immunity as presented ; and the fact that these conclusions are proved to be true by the recent experiments of Emmerich, and Behring and Kitasato, is strong testimony to the accuracy of the theory that gave origin to these conclusions.

In the second place, let us note what beneficial results may be expected from the introduction of the products of the bacteria. As we have said, it matters not, so far as this argument is concerned, whether these substances act directly as chemical poisons or indirectly as enzymes producing toxalbumins. In either case it is clear that they can have no directly curative result in an animal sick of the disease ; nor can they have any direct action in conferring immunity when injected into healthy animals. Whatever action they may have in either instance must, in accordance with the theory outlined, be an indirect one, and dependent on the power that these substances have of exciting the cells to the production of the substances that either destroy bacteria or neutralize their products, and thus terminate the disease and confer immunity. The disease is here terminated, and immunity conferred, not by the products of the bacteria, but by the products of the cells, in the same manner as when the cellular, instead of the bacterial, products were

introduced. The only difference is that, in the first instance, the cellular products are formed in the body of one animal, and introduced as a curative or prophylactic agent into the body of another animal, and whatever action they may have would disappear with their elimination. In the second instance, the cellular products are formed in the body of the animal experimented on, and by reason of this fact the animal would have this cell-function more fully developed. This, as we have already explained, would confer a more lasting immunity. By the injection of bacterial products in animals capable of resisting the disease, we may, therefore, expect to confer a more or less lasting immunity.

What may we expect from bacterial products as curative agents? From what has been said it is evident that bacterial products can in no sense be considered as curative agents. They are the cause of the disease, and not of the cure. While this is true, it may also be true that the presence of a large quantity of bacterial products in the body of an animal may cause the cells of that animal the more quickly to produce the counteracting cellular products that terminate the disease and confer immunity. We may, therefore, hope to hasten the termination of a *self-limited* disease by the careful injection of the bacterial products of that disease. But it is a nice question whether this is ever justifiable, even in the treatment of self-limited diseases.

In such diseases, by introducing the chemical weapons that are being used by the bacteria in their fight, we hope the more quickly to stimulate the cells to the production of the proper substances in sufficient quantity to more rapidly terminate the disease. In this method there is the evident danger of introducing too great a quantity of the bacterial products. Should we do this, instead of stimulating the cells to activity, we would paralyze their function and give the victory to the bacteria.

By injecting bacterial products, even in the self-limited diseases, we sacrifice the certainty to the rapidity of the cure. And in diseases *not* self-limited we hasten the fatal termination of the disease.

To show that the foregoing theoretic considerations have an important practical bearing, before closing my paper let me note the fact that they offer a most satisfactory explanation of the variable results that have been obtained by the treatment of tuberculosis with tuberculin, and that they may assist us in selecting the proper cases for this treatment.

Tuberculosis is in many instances, with good food and hygiene, and under favorable climatic surroundings, a self-limited disease, and it is only in such cases that the use of tuberculin would be permissible. Here, while it would have no direct curative effect on the disease, it would hasten the process by which Nature cures the disease. But in

cases *not* self-limited it can only hasten the process that brings a fatal termination. The responsibility of using tuberculin is, therefore, a very great one, since the agent should never be used unless we are quite sure, from the family history, the general condition of the patient, and his hygienic and climatic surroundings, that the disease in this particular instance will be self-limited.

THE USES OF FEVER. THE DANGERS OF ANTIPIRETICS IN TYPHOID FEVER.¹

BY J. H. MUSSER, M.D.,
OF PHILADELPHIA.

ANIMAL heat serves a physiologic purpose in the economy. When this degree of heat is beyond the limits of the norm its purposes are not physiologic. In health, normal heat is a stimulus essential to the carrying on of physiologic processes. Without it the nerve-centers controlling respiration, circulation, and other processes are dormant. No stretching of the imagination is necessary to conceive of such an impairment of the vital forces in consequence of which increased heat or fever is essential as a stimulus to enfeebled nerve-centers.

The following observation impressed the writer with the use of fever as a vital stimulant:

The patient, two years old, was ill of whooping-cough and its graver pulmonary complications—capillary bronchitis and atelectasis. Exhaustion was extreme, on account of her long illness of three months. Fever was marked. During the last week of her illness death was daily, then hourly expected. The hands and feet became cold, the face pale, the respirations excessively rapid and feeble (from 100 to 110), the pulse feeble and irregular and so rapid that it scarcely could be counted; a cold sweat bathed the brow, while stupor was present. These grave symptoms were first observed in the mornings. The temperature ranged between 100° and 101° at this time. As the day advanced, the usual afternoon exacerbation of fever took place. With such degree of heat came evidences of renewed strength. The extremities warmed, the color brightened, the respirations were less labored, the pulse became perceptibly stronger and fuller and more regular; intelligence was restored; though refused before, food was now taken with avidity, and even asked for, and notice taken of objects and events. Hope was restored, to fall again with each degree of decline of the thermometer.

These paroxysms of heat-exacerbation and stimulation at first took place daily. On the last three days of the child's illness, as recorded by the thermometer, they took place every two or three hours. Indeed, during the period of lowered temperature, so depressed and feeble was the child that death was momentarily looked for. As the temperature rose—but not until it was above normal for some time—the grave symptoms disappeared. These hourly

¹ Read before the College of Physicians, February 3, 1892.

heat-paroxysms were closely watched, and to no other cause than the stimulus of heat could the revivals of strength and increased functional activity of the circulatory and respiratory apparatus be attributed. It was difficult to picture, and was certainly a most striking exhibition of the play of heat-centers in the phenomena of life. Finally, the heat-centers did not respond to the unknown stimuli, after the stage of exhaustion they had undergone, the temperature did not rise, and gradually all function ceased.

I wished more particularly to place this observation on record in order that we should bear in mind in these times, when so much is said about the use of antipyretics, the dangers of fever, and the necessity of reducing temperature, that at certain times high temperature may have a physiologic use in the economy. I am well aware that certain German and French writers have held that high temperature is a conservative process, particularly in septic conditions, through its effect upon the bacteria or the poisons generated by them. But, independently of this action, fever serves quite a physiologic use in the economy. This is the only observation that I wish to record in regard to the use of fever.

The following remarks are addressed to practitioners who continue to use, and think they must use, antipyretic medicines, because the thermometer records high temperatures. I have never used such means to reduce temperature in typhoid fever, but I wish to particularly impress upon those who will use antifebrile drugs that it is at times essential they should withhold their hands. The present intemperance in the use of antipyretics is due to laudation in the past of this class of drugs by eminent therapeutists.

Now, in regard to the danger of the use of antipyretics in certain cases of typhoid fever. There are three periods in the course of typhoid fever when, without doubt, the use of antipyretics is dangerous, and these must be carefully considered: First, in the early or middle period of cases that come to us after removal from a distance. Sir William Jenner was the first to lay great stress upon the danger of the removal of a patient suffering with typhoid fever. Anyone that observes cases in the medical ward of a hospital will notice that the temperature for the first twenty-four hours after admission is unusually high—that is, higher than one would expect at the period that the disease has reached. This rise of temperature is undoubtedly due to the exhaustion that has taken place on account of the removal to the institution. I have seen this so often and made so many observations in connection with it that I hesitate to use any antipyretic during the first twenty-four hours after admission. The records that I have bear out the correctness of this course. Even if no antipyretic is

given, the temperature usually falls to the proper point in twenty-four hours. Sometimes stimulants are required, and under their use the temperature falls. On the other hand, I have seen cases admitted with a temperature of 105° or 105.5° , in which an antipyretic was given with serious results. I am so sure of the inadvisability of administering an antipyretic under these circumstances that I direct that no antipyretic be given during the first twenty-four hours after admission, but that stimulants shall be administered.

Again, there are certain cases in which peculiar idiosyncrasies exist, in which it is inadmissible to use antipyretics during the course of typhoid fever, no matter how high the temperature may be, if life is not threatened. I remember one such case among a number of others. We have all seen patients that were particularly susceptible to drugs, to the application of external cold, to any kind of stimulant, and to opiates or alcohol in any form. The case that I have in mind is that of a young woman who was in the private ward of the Presbyterian Hospital, with typhoid fever running a regular course, but with excessively high temperature. It was impossible to administer any antipyretic. She was extraordinarily susceptible to quinine, one grain producing serious nervous symptoms. The use of alcohol caused increased headache and violent nervous symptoms. The external application of cold and the external use of alcohol or other refrigerants produced shivering and great depression. Without my concurrence, five grains of antipyrin on one occasion were administered with such serious collapse that for five hours it required the efforts of three of the *internes* to restore the patient to her natural temperature, and, in fact, to save her life. It was the most extraordinary degree of depression that I have seen from a single administration of the drug. This is an example of a number of cases in which it is impossible to administer antipyretics, as a result of peculiarities of individual constitution. I think that physicians who are constantly calling attention to the use of antipyretics neglect to look for these peculiarities, which I think are present in many cases. I have now under observation an individual of highly nervous temperament, to whom I would not administer an antipyretic unless life was absolutely threatened.

It is in the latter stages of typhoid fever that I think antipyretics are especially dangerous, and must be administered with the greatest care. Two classes of such cases are worthy of attention. There is one class in which the temperature persistently remains at the maximum, but there is abatement of all of the other symptoms—lessening of the diarrhea, cleaning of the tongue, diminution of the delirium, and even lowering of the pulse, with in-

crease of strength. We feel that the typhoid process is ended, but the fever, nevertheless, continues high. I will illustrate this with brief reports of two cases:

In the first case, in a lad ten years of age, whom I attended during the course of an attack of typhoid fever, from the fifteenth to the eighteenth day of the disease the temperature ranged between 104° and 105.5° . The tongue had cleaned, the number of stools had lessened and these were gradually becoming formed, and I felt that the pathologic process was at an end, and that if we waited a little while the fever would probably subside. There were no dangerous symptoms except the high fever. At 10 o'clock on the evening of the eighteenth day the temperature was 105° ; it then began to fall until, at 6 o'clock in the morning, it was just below 96° ; it required all the efforts of the father and the nurse to prevent what they thought to be a fatal collapse. The temperature remained below 96° for an hour, then began to rise, and by 9 o'clock in the evening it was 104° . It remained at about this point for two hours, and then gradually fell until in the morning it was 96.5° . It then rose again, to be followed by another fall, but not to such a low point. There is no way in which this fall in temperature could have been anticipated. If we had applied external cold or administered an internal antipyretic, I am quite sure that the collapse that occurred naturally would have been a fatal one. This sudden fall often occurs in typhoid fever in children, and it is one of the ways in which the fever subsides, the disease terminating by crisis.

In the second case—that of a young man, seventeen years of age, who was treated in the private wards of the University Hospital a year ago, and who had a prolonged and severe attack of typhoid fever, the temperature keeping high—without warning or cause a "nervous chill" occurred, followed by a fall in the temperature from 104.4° to 95.5° , the thermometer rising again to its former level. The temperature kept thus for five or six days, and then gradually fell. I know of no way in which the fall of temperature could have been anticipated. Before it occurred we were much tempted to use some active means to reduce the temperature, but, had this been done, it might have been serious for the patient.

I recently treated with turpentine, in the Presbyterian Hospital, a case of typhoid fever in a man twenty-six years of age, in whom the disease ran a perfectly normal course. While grave, the symptoms were not alarming, and the temperature ranged between 103° and 104° . At one of my visits I found a falling temperature, which continued until the mercury registered 96.5° , being followed by a gradual rise, with a subsequent decline by lysis. This is another case in which no one could have anticipated the fall of temperature, which, I am sure, was a part of the disease, and not due to any cause that would produce collapse.

These three cases are examples that I have taken at random from an abundance of typhoid fever notes, in which the administration of an antipyretic

in the latter stages of the disease would have been dangerous.

Of course, there is still another class of cases in which it would be dangerous to administer an antipyretic, those, viz., to which Dr. Da Costa has particularly called attention, in which the morbid process has terminated, but—on account of the exhaustion, or the long continuance in bed, or the limited diet—the temperature keeps up, or even begins to rise. Such a case was under my care last year. These have been spoken of as cases of bed-fever, and in such instances the administration of an antipyretic would not have the desired result. In these cases the fever is due to exhaustion, lack of food, and long continuance in bed. The use of stimulants, solid food, and getting the patient out of bed, bring back the temperature to the normal.

The foregoing are the classes of cases to which I wished particularly to call attention in connection with the dangers of antipyretics in typhoid fever. The attention of the College is invited as much for criticism as for discussion, and, finally, in order to say that if physicians will give antipyretics in typhoid fever, it behooves them not to administer them in the cases or under the conditions related.

DIPHTHERIA AND ITS TREATMENT.

BY ALEXANDER FULTON, M.D.,
OF PHILADELPHIA.

THE coccus insect, a miniature creature, feeds particularly on one plant, the nopal; the potato-bug on the potato-vine; the rose-beetle on the rose-vine, etc. These parasites suddenly and mysteriously appear and disappear; are very destructive to the plant; only starvation will make them infest other plants; and, owing to great powers of multiplication, the means must be prompt and efficient to kill them. So it is with the diphtheritic bacterium. It has an especial affinity for the tonsils. Its presence on these organs is the local manifestation that chiefly characterizes diphtheria. If not early and thoroughly destroyed, it will multiply and extend its ravages with wonderful rapidity and injury.

The subjoined treatment is based upon this theory, and has been successful in thirty-seven consecutive cases, this number being all of the cases in which I used it. It consists in the application to the patches of a strong solution of argentic nitrate, $\frac{3}{4}$ to $\frac{1}{2}$ ss of rose-water, by means of a throat-brush, so constructed that it will not break, etc. I wish to emphasize that this application must be repeated at one sitting sufficiently to remove the patches or to saturate them. Failure in this respect may cost the life of the patient.

In the early stages of the disease the patches can

almost invariably be wiped off with one sweep of the brush, which is not the case later on, when they become deeply adherent. These applications should be made twice a day, morning and night, but may be used according to the exigencies of the case, or so long as the deposits are observed, since they show a tendency to reappear. Often after one effectual cleansing of the throat in this way the patches do not return, and there is a subsidence of all of the symptoms of the disease. The agent must be kept in a blue bottle excluded from the light, and the brush or whatever instrument is used in making the application should be washed and kept in an antiseptic solution.

If practicable, the foregoing procedure should be immediately followed by a gargle, such, *e.g.*, as the following :

R.—Tinct. kino f $\frac{3}{4}$ ij.
Glycerin f $\frac{3}{4}$ ij.
Ol. eucalyptol gtt. x.—M.

S.—A teaspoonful in a tablespoonful of water as a gargle.

The operator may wear gloves to prevent discoloration of the hands by the silver, and the face should also be guarded from the stain.

Whether or not the gargle be used, the throat should be dusted with the following :

R.—Hydrarg. chlor. corros. . . . gr. j.
Pulv. sulphuris 5j.—M.
S.—Blow a pinch into the throat every four hours.

For this purpose, I use an insufflator, shown in the annexed engraving. A pinch of the powder

FIG. 1.



component of the treatment is pressed into the tube as it opens above the tongue-depressor attachment. Thus charged, it is used as an ordinary tongue-depressor, when, upon the desired exposure of the part to be treated, compression of the rubber ball expels the powder in an effective and reliable manner. It may be necessary to discontinue the use of this mercurial combination in a day or two. Its administration must be under the supervision of the physician, on account of the possible systemic toxic action, although I have not experienced any such unpleasant occurrence.

In connection with this treatment I give from the commencement, according to the age of the patient:

R.—Pulv. potas. chlorat. 3ij.
Tinct. ferri chlor. f $\frac{3}{4}$ ij.
Syr. limonis f $\frac{3}{4}$ ij.
Ol. gaultheriae gtt. iij.—M.

S.—A teaspoonful every two or three hours.

I also apply externally, over the site of the tonsil :

R.—Tinct. iodi. f $\frac{3}{4}$ ij.
Ol. camphorat. f $\frac{3}{4}$ j.—M.

S.—Apply every four hours.

This is best done by wetting a piece of flannel with the remedy and holding it in place by means of a roller bandage.

I have always found this procedure to reduce the external swelling. Care must be exercised so as not to soil the clothing.

When there is a rise of temperature, indicating the need of antipyretics, I resort to small doses of antipyrin and withhold its use upon a sufficient diminution of temperature. During convalescence I advise the use of mist. ferri et ammon. acetatis, light nutritious diet, and champagne.

Sometimes the stomach is so irritable that it rejects everything given. This condition is generally alleviated by giving the wine.

In only a few cases were there noteworthy sequelæ, from which the patients ultimately recovered.

Perhaps in my cases the reality of the disease may be doubted, but the adoption of the treatment will convince the most skeptical. However, the accompanying drawing represents the membrane as removed in almost every one of my cases.

FIG. 2.



Furthermore, albumin was almost always present in the urine. Sometimes angina coexisted.

The mortality and gravity being large, it seems that the treatment of diphtheria may be susceptible of much improvement. Anything that has been proved useful in so large a number of cases as I report is certainly worth a trial.

Alumni Association of Jefferson Medical College.—Dr. Jerome K. Bauday, of St. Louis, will deliver the annual oration before the Alumni Association of Jefferson Medical College on Monday evening, April 25, 1892, at 8 o'clock, in the amphitheater of Jefferson Hospital, after which a dinner will be tendered him at the Hotel Stratford.

RECENT ADDITIONS TO THE MATERIA MEDICA.

BY W. A. N. DORLAND, M.D.,

INSTRUCTOR IN GYNECOLOGY, PHILADELPHIA POLYCLINIC.

(Concluded from page 427.)

METHACETIN, $C_8H_{14}OCH_3 \cdot NH \cdot C_2H_5O$. Para-acetanilidin or oxy-methyl-acetanilid, is a derivative of amido-phenol. It occurs as a slightly reddish crystalline powder, odorless, of a faintly bitter, saline taste, soluble in warm water but less so in cold, very soluble in alcohol and glycerin, melting at 248° F. It resembles antipyrin in action, and the effects ensue rapidly on account of the drug's solubility. The fall of temperature is gradual, lasting some hours, and followed by a rise. Methacetin is best administered in pulmonary tuberculosis between three and four in the afternoon. The fall in temperature is accompanied by profuse sweating, and occasionally the drug exerts an unfavorable influence upon the heart, slight collapse following the exhibition of 7 grains. Seidler found that it acted well in acute and subacute rheumatism, mitigating the pain, fever, and swelling. It is, however, less efficacious as an antineuritic. *Dose*—from 2 to 4 grains, exhibited with great caution.

Antipyretic, antineuritic.

MICROCIDIN. Sodium naphtholate, a combination of naphthol and caustic soda, occurs as a tasteless, odorless, white powder, very soluble in water, giving in concentrated solution a brown color; it has no caustic properties and is but slightly toxic; it is antipyretic, and is excreted in large quantities by the kidneys. It is superior to phenic and boric acids as an antiseptic, but inferior to naphthol and corrosive sublimate. Solutions of from 3 to 5 : 1000 answer every purpose. Under its influence leg-ulcers and suppurating wounds cicatrize rapidly, and the odor of gangrenous wounds is quickly neutralized. For infected wounds a 5 : 1000 solution is needed, but a 3 : 1000 solution is sufficient to guard wounds from infection. Berlioz places microcidin among the best and most innocuous antiseptics.

OREXIN, $C_{14}H_{14}N_2 \cdot HCl \cdot 2H_2O$. Phenyl-dihydro-chinolin hydrochlorate, is a yellowish-white crystalline powder with a nauseous pungent taste; insoluble in ether, soluble in water and alcohol. It has the property of stimulating the gastric secretion and thus of increasing the appetite. Penzoldt has had great success with it in anorexia not due to or complicated with gastric disease proper; it is only to be used in anorexia when this condition is a secondary symptom. He has employed it after major operations, in pulmonary tuberculosis, chlorosis, pleuritic exudations, pulmonary emphysema, heart-affections, various anemic conditions, and in defective nutrition generally. Its use is counter-indicated by the existence of any gastric disease proper (on account of its irritating action on the mucous membrane), in advanced pernicious constitutional disease, or when there is pre-existing hyperacidity due to HCl. It has given good results in chronic gastric catarrhs other than those of congestive origin and those due to alcoholism. Gordon has used it as an appetizer and stomachic in children, with satisfaction. *Dose*—from 2 to 5 grains in gelatin-coated pills, powder, or wafers during meals, with copious draughts of milk or beef-tea, to prevent any possible gastric irritation. *Stomachic.*

OUABAIN, $C_{30}H_{46}O_{19} + 7H_2O$, is a glucoside obtained by crystallization from a watery extract of the roots of Ouabao, *Carissa Schimperi*, a member of the important family of apocynaceæ. It appears in rectangular scales, excessively thin and of a pearly aspect, odorless, and without appreciable bitterness; it is slightly soluble in cold, and very soluble in boiling water and moderately concentrated alcohol; insoluble in chloroform, anhydrous ether and absolute alcohol; it melts at 200° C., and is violently poisonous. It is probably homologous with strophanthin, which it closely resembles in its action, being, however, more toxic. The toxic effects are considerable slowing of the pulse and respiration, the latter of which is especially to be guarded against. It has been found very efficacious in whooping-cough. It promotes the action of the skin after three or four days' treatment, and also increases the flow of urine, and diminishes the quantity of sugar that may be present. Its action is not cumulative. Applied to the eye it produces corneal anesthesia, but is inferior to cocaine. *Dose*—from $\frac{1}{300}$ to $\frac{1}{20}$ grain given as a per mille solution; according to Gemmell, the standard dose for a child under five years is $\frac{1}{6000}$ grain every three hours in solution. *Diuretic.*

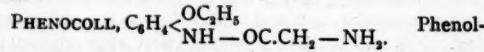
PAMBOTANO is a Mexican plant, *Calliandra Houstoni*, belonging to the order of leguminaceæ. It is a bitter of the first order, of great value in marsh fevers, typhoid fever, influenza, and tuberculosis. Usually one dose is sufficient to cure periodic attacks. *Dose*—70 grains in twenty-four hours to an adult, administered in four equal portions in hot sweetened water or tea. The preparations are the tincture, decoction, and alcoholic elixir. *Antimalarial.*

PAPAIN is a ferment obtained from the milky juice of *Carica papaya*, a South American fruit tree of the natural order papayaceæ; it is prepared by mixing the juice with alcohol. It occurs as an amorphous yellowish-white powder, odorless, almost tasteless; soluble in water, but not in alcohol. Its composition has not yet been determined, but it contains 10.6 per cent. of nitrogen. It possesses active digestive powers, but differs from pepsin in the fact that it softens and dissolves fibrin in liquids that may be either acid, neutral, or slightly alkaline. It also acts at higher temperatures and more rapidly than pepsin. It is the best solvent known for diphtheritic membrane, and, according to Baginsky, should be dabbed on, to avoid irritation of the affected area; a 5 per cent. solution should be used for this purpose, or as a spray. The following prescription of Dr. W. C. Caldwell has obtained special popularity in diphtheria: Papain, 2 drams; hydronaphthol, 3 grains; hydrochloric acid, 15 drops; distilled water, q. s. ad 4 drams; to be applied to the membrane with a camel's-hair brush. One of the principal fields of usefulness for papain is the expulsion of intestinal parasites; it destroys or digests the parasites, after which a laxative is required to expel them. For tape-worm, from 3 to 10 grains are mixed with 4 grains of Dover's powder, and one-sixth taken night and morning. It is said to have a solvent effect when applied to indurated carcinomatous tissue, and, so used, has yielded good results in the hands of competent observers. A 5 per cent. solution with a 2½ per cent. solution of sodium bicarbonate has been recommended for cleansing the middle ear in chronic suppuration, 15 minims being

dropped into the meatus. A solution containing 12 grains of papain, 5 grains of borax, and 2 drams of water, painted on the hands twice a day will remove the warts in chronic eczema and hypertrophied conditions of the palms of the hands. A solution in glycerin is useful for ulcers and fissures of the tongue. *Dose*—from 1 to 10 grains, best administered alone. The elixir of papain may be used in dyspepsia and sea-sickness in 1 dram doses. *Digestant*.

PARACRESOTIC ACID, $C_8H_9O_3$, is prepared from paracresylol by the action of carbonic acid in the presence of sodium. It crystallizes from water in long, white, brilliant needles, slightly soluble in cold water, and more so in warm water, alcohol, ether, and chloroform; it melts at 151° F. It is employed mostly in the form of *sodium paracresotate*, $C_8H_9NaO_3$, a very fine crystalline powder, of bitter but not disagreeable or nauseating taste, soluble one part in twenty-four of water. Its action is very similar to that of sodium salicylate, and it has found special application for administration to children. It is a safe and reliable antipyretic. It is eliminated in part as pure paracresotic acid, and partly as that acid associated with glycosuric acid. It has antiseptic properties as powerful as those of salicylic acid. Demme largely used it as an antipyretic and antizymotic in children with acute articular rheumatism, in which, though inferior to salicylic acid as an antipyretic, it did not provoke as grave troubles. It is well tolerated by the digestive organs. It exerts a favorable influence upon the course of catarrhal pneumonia. In the gastro-intestinal catarrh of nurslings it gives results analogous to those of resorcin. For this purpose Demme used the following prescription: Sodium paracresotate, from grains $1\frac{1}{2}$ to 3; tincture of opium, from drops 2 to 4; cognac, minimis 15; syrup of acacia, dram 1; distilled water, drams $6\frac{1}{2}$. Of this a dram was given every two hours. *Dose*—from 2 to 3 grains in a one-ounce mixture, a teaspoonful of which is given every two hours (for children); larger doses (up to 2 drams of the salt) may be safely given to adults. *Antipyretic*.

PENTAL, C_6H_{10} . Trimethylethylene, produced by heating amylen hydrate in the presence of acids, is said by v. Mering to be a safe and effective anesthetic. It is a colorless liquid of low specific gravity, boiling at 100.4° F., and burning with a luminous flame; it is insoluble in water; exceedingly volatile; but does not decompose on exposure to air or light. It is readily inhaled, without affecting the membranes of the throat or air-passages. From 10 to 25 cc. suffice to anesthetize, the narcosis coming on gradually, without any preceding symptoms, without any influence on respiration or heart-action, and with no unpleasant after-effects. Although sensibility is absent, consciousness is partially preserved, and in deepest narcosis patients open the mouth and jaws when directed to do so. Awakening is quite gradual. The agent is best administered by means of Junker's inhaler, which modifies the unpleasant odor of the fluid. *Anesthetic*.



glycooll, or amido-acet-para-phenetidin, occurs in white, acicular crystals, with a tendency to mat themselves together; it is slightly soluble in ether, benzol, chloroform, and cold water, freely so in alcohol and warm water. *Phenocoll hydrochlorate* is a white, micro-

crystalline powder, soluble in sixteen parts of cold water the solution being of neutral reaction; it has an unpleasant bitter and saline taste. *Phenocoll* kills by an action upon the respiratory center, but does not affect the composition of the blood. Its antipyretic action is rapid and powerful, but the effect upon the temperature is of but short duration. *Phenocoll* is especially efficacious in fever of hectic type, and is a superior antipyretic in typhoid fever and pneumonia. It does not produce collapse or cyanosis, and gives rise to but slight sweating. It is rapidly eliminated, and seems to exert no injurious effect upon the kidneys. It is a valuable nervine, and answers well as an antirheumatic in chronic rheumatic affections, as well as in the acute affections and in sciatica; it has no effect, however, in gonorrhreal rheumatism (Hertel). It has been successfully employed in influenza. In pulmonary tuberculosis, it has been used subcutaneously with advantage. *Dose*—of the hydrochlorate, from 8 to 15 grains; repeated at intervals of about one hour. It is preferably administered at bed-time, as the action of the drug is heightened during the complete rest of the night's sleep. *Antipyretic, analgesic, nervine*.

PIPERAZIN, $C_4H_{10}N_2$, is a piperidin in which the CH_2 group has been replaced by the NH . It occurs in well-defined acicular colorless crystals, readily soluble in water and strongly alkaline in solution, with no toxic properties. It is particularly designed to take the place of the lithium salts, and has proven itself of great service in the management of the uric-acid diathesis, with the formation of concretions in the kidneys. In this condition, tablespoonful doses of the $\frac{1}{2}$ per cent. solution are employed; the drug hastens the elimination of the renal calculi and arrests the severe colic-like paroxysms. Undoubtedly piperazin possesses unusually great uric-acid solvent power, and its general applicability in gout, rheumatism, urinary calculus, and all diseases consequent upon the uric-acid diathesis is evident. Its great advantage over lithium is that it will form seven times more of a combined salt with the uric acid than will lithium, and the resultant piperazin urate is twelve times more soluble than the lithium urate. The following mixture has been recommended for solvent purposes: *Piperazini puri*, grains 15; *syr. cort. aurant.*, drams 6; *aqua destil.*, q. s. ad ounces 6; to be taken during the day. In lumbago, subcutaneous injections of a 2 per cent. solution were employed, with entire relief from the pain in nine or ten days; the injections themselves were quite painful, but no abscesses or unpleasant after-effects were noted. *Piperazin* has been used in mental troubles and in lead paralysis as a tonic and diuretic, and has been recommended in pruritus and nocturnal enuresis. *Dose*—from 5 to 8 grains several times daily, with a maximum of from 15 to 30 grains; subcutaneously, 5 grains. The best mode of administration is as follows: Dissolve 15 grains of pure piperazin in about one quart of carbonated water, and direct the patient to drink this amount in convenient doses in the day. By adding 15 grains of phenocoll hydrochlorate an additional analgesic action is secured. *Piperazin water*, thus prepared, may be bought in one quart mineral-water bottles. *Uric-acid solvent*.

PYOKTANIN, or *methyl-violet*, appears in two varieties, blue for surgical, and yellow for ophthalmic purposes. Both are made into dusting powder (2 per cent.), oint-

ment (2 per cent.), and gauze (1:1000). The stains produced by pyoktanin upon the skin may be removed by alcohol. Pyoktanin possesses antiseptic properties to a marked degree, and when injected into the tissues diffuses itself at once. By its action on the nuclei of cells of neoplastic growths pyoktanin renders them sterile. Professor Ceccherelli arrested the growth of an enormous sarcoma of the lower jaw by means of parenchymatous injections of from $\frac{1}{2}$ to 1 dram of a 1:300 solution, repeated every two or three days. Pyoktanin has also been used in epithelioma of the cheek, eyelid, and breast, and Boldt asserts that good results and possible cures follow its injection in uterine carcinoma, together with 4 grain doses internally daily. Bellotti has used it with success in the form of dressings of carbolized cotton-wool, saturated with a 1 per cent. solution of pyoktanin, in a rodent ulcer of twelve years' standing. The pain that is produced when it is dusted upon carcinomatous growths may be alleviated by the use of cocaine. In a $\frac{1}{2}$ per cent. solution and in pencil form it is well borne by the eye, according to Marchetti. Especially is it of service in dacryocystitis, chronic blennorrhea, extensive corneal infiltrations, hypopyon-keratitis and panophthalmia. It has also been used in suppurating affections of the nasal cavity, and in injections of 1 to from 500 to 1000 twice daily in obstinate chronic cystitis. *Dose*—from 1 to 5 grains. *Antiseptic*.

PYRIDIN, C_5H_5N . A liquid alkaloid obtained in the destructive distillation of bones; it is colorless and mobile, with a powerful empyreumatic odor, boiling at $242^{\circ} F.$, having a specific gravity of 0.985, and being freely miscible with water, alcohol, ether, and chloroform. It forms crystalline salts with acids. It is employed to relieve the dyspnea of asthma, and is believed to be the active agent in the various cigarettes recommended for that purpose. The vapor of a dram inhaled two or three times a day eases respiration and soon effects a cure. Pyridin has also been used in angina pectoris and cardiac failure. *Dose*—from 1 to $1\frac{1}{2}$ drams by inhalation. *Anti-asthmatic*.

SALIPYRIN, $C_{11}H_{12}N_3O.C_7H_8O_3$, antipyrin salicylate, occurs in crystalline scales or in powder; it is odorless, of a pleasant acidulous taste, almost insoluble in water and ether, and freely soluble in alcohol. It may be given in all cases in which the combined action of antipyrin and salicylic acid is desired. It lowers the fever temperature of the body, and has pronounced analgesic action in cases of acute articular rheumatism, diminishing the tense and painful feeling in the affected joints, without producing the profuse perspiration seen after the use of salicylic acid. In rheumatic sciatica and in neuralgias of the face of rheumatic origin, its action is prompt. Hennig recommends it in influenza. *Dose*—from 15 to 30 grains at intervals of two, three, or four hours, until 90 grains are taken. It may be administered in capsule, wafers, or in solution, thus: Salipyrin, $1\frac{1}{2}$ drams; glycerin, $3\frac{1}{4}$ drams; syr. rub. id., $7\frac{1}{2}$ drams; aqua destil., 10 drams. Of this a tablespoonful should be taken at a dose. *Analgesic, antipyretic*.

SALOPHEN, $C_6H_4 < \begin{matrix} OH \\ COO.C_6H_4N \end{matrix} < \begin{matrix} H \\ CO.CH_3 \end{matrix}$, a derivative of salicylic acid, containing 51 per cent. of the latter drug, occurs in the form of small crystalline plates, is

white, odorless, tasteless, scarcely soluble in water, very soluble in alcohol and ether. In the body it is broken up into salicylic acid and acetylparamidophenol. When administered in acute articular rheumatism, the pains are rapidly dispelled and the swelling quickly disappears. It is not so prompt in alleviating the pains of chronic rheumatism; nor does it protect against relapse in the acute form. It has but a slight antipyretic action. *Dose*—from 60 to 90 grains daily. *Anti-rheumatic*.

SOLUTOL, is a preparation containing in 100 c.c., 60.4 grams of cresol, of which one-fourth is free, and the other three-fourths in combination as sodium cresol. Solutol is miscible with water, forming a perfectly clear solution. It is claimed that solutol combines the disinfecting action of cresol and sodium hydrate. For the disinfecting of rooms, etc., an odorless, pure form is manufactured. It is generally used in 5 per cent. solution. For surgical disinfection a neutral solution of cresol in sodium-cresol is sold under the name of *solveol*; employed in $\frac{1}{2}$ per cent. solution, it is less poisonous than a phenol solution of equal efficacy (from 2 to 3 or 5 per cent.). *Disinfectant*.

SOZOIODOL, $C_6H_5(HSO_3)_2I_2OH$, di-iodo-paraphenolsulphonic acid, is a combination of iodine (54 per cent.), carbolic acid (20 per cent.), and sulphur (7 per cent.). It has powerful antiseptic properties, and is recommended as an odorless substitute for iodoform, in syphilitic, tuberculous, and scrofulous ulcerations. On account of its insolubility, sodium and potassium-sozoiodol are specially recommended in affections of the respiratory organs, such as ozena and laryngitis, in the form of insufflations. Sozoiodol itself is very efficacious in tuberculous and scrofulous ulcerations and in affections of the generative organs, such as gonorrhœa and syphilis. In leg ulcers and superficial burns Nitschmann advises the use of the following ointment: sodii sozoiodol, 1 dram; lanolin, 10 drams. *Antiseptic*.

STYRACOL, the cinnamate of guaiacol, has been introduced as a tasteless substitute for guaiacol. It has pronounced antiseptic properties, retards fermentation and decomposition, accelerates the healing of wounds and sores, and has marked therapeutic value when administered internally for catarrh of the bladder, gonorrhœa, gastro-intestinal catarrh, etc. *Dose*—5 grains. *Antiseptic*.

SULPHAMINOL, thio-oxydiphenylamine, is obtained by the action of sulphur on the salts of methoxydiphenylamine. It is a pale-yellow, odorless, and tasteless powder, insoluble in water, soluble in alcohol, glacial acetic acid, and alkalies; it melts at $311^{\circ} F.$; is non-toxic, and has been used with success as a substitute for iodoform. In contact with the animal secretions it is said to split up into its components, sulphur and phenol. Its application is painless, and it appears to be an antisuppurative. It exerts a peculiar desiccating influence upon wounds, which heal rapidly under its influence. Especially is it of service in the after-treatment of nasal operative wounds in the form of insufflations, as well as in diseases of the antrum and frontal sinuses. *Antiseptic*.

THERMIFUGIN, $C_9H_8(CH_3)NCOONa$, methyl-trihydroxyquinolin, or sodium carbamate, is a faint, yellowish-white, lustrous salt, forming a brown solution with water. Although it has not come into general use, it is recommended as an antipyretic, being said to combine

the three properties of reducing temperature, retarding the pulse, and increasing the blood-pressure. *Antipyretic.*

THILANIN is a sulphuretted lanolin, designed to replace ichthylol and thiol. It is a dark-brown ointment-like mass, having about the same consistence as lanolin, and a slight sulphurous odor, containing about 3 per cent. of sulphur. It can be readily mixed with liquids, whether oleaginous or aqueous, is absolutely non-irritating, and has a more energetic action than other remedies. It mitigates the itching in a number of skin-affections, and has been used successfully in all forms of eczema, wherever situated, in children and adults. Good results are reported in sycosis, acne, and other affections. *In dermatology.*

THIOL, or German ichthylol, an artificial representative of natural ichthylol, is prepared by heating gas-oil with sulphur. Thiol is met with in two forms: *dry*, in black or brownish scales, or in dark-brown powder with a feeble, bituminous odor and bitter astringent taste; and *liquid*, the latter containing about 40 per cent. of the former, which may be prepared from it by evaporation. An ointment of liquid thiol, 1 in 8, and a dusting powder of dry thiol 1, with starch 1, oxide of zinc 2, and talc 16, have been employed. Thiol is soluble in alcohol, ether, and water. Gottschalk has used it in inflammation of the uterus and its appendages; he has treated parametric and perimetric exudations with vaginal tampons impregnated with from a 10 to 20 per cent. glycerin solutions of the drug. A free flow of vaginal secretion is produced, and the tampon is removed in twenty-four hours. At the same time he rubs the abdomen with a salve of thiol. The pelvic exudates disappear in a few weeks. Inflammatory erosions about the vagina are treated successfully with dry thiol powder, while acute and chronic endometritis yield readily to the solution applied on an applicator. At times an exfoliation of the mucous membrane is produced. *Dose*—of dry thiol, from 2 to 10 grains. *In gynecology.*

THYMACETIN, $C_6H_5CH_2C_3H_7<OC_2H_5$
 $NH(C_2H_5O)$, is a de-

rivative of thymol. It is a white crystalline powder, slightly soluble in water. Its therapeutic properties have not yet been thoroughly studied. In thirty-grain doses it does not produce toxic effects upon the dog. Jolly, of Berlin, has studied its action upon the nervous system of man. He finds that it arrests headaches, except migraine, which is but slightly affected by it. On the contrary, generalized cephalgia, either paroxysmal or continuous, in the course of some other malady, yields readily to it. It failed in cephalgia due to a cerebral lesion; and in a case of gastric crisis for a short time only it was substituted successfully for morphine. In some instances it has given rise to congestion of the head, and at times to somnolence. It has also, then, a soporific effect. *Dose*—from 3 to 15 grains. *Antineuralgic.*

TRICHLORACETIC ACID, $HC_2Cl_2O_2$, occurs in deliquescent colorless crystals. It is one of the best caustics in the *materia medica*, especially for rhino-pharyngology. It cannot be melted on a sound like silver nitrate or chromic acid; hence there is some difficulty in applying it. The best method of application is to wrap a tiny firm ball of cotton-wool round a fine-pointed sound and soak it with the liquefied acid. Whilst chromic acid causes violent pain during and after application, trichloracetic acid does

not cause any unpleasant sensation until some seconds after it has been applied, and then the pain is quite transient, and may be entirely or very nearly annulled by cocainizing three or four times before the acid is applied. The parts of the mucous membrane treated with the acid become snow-white, and the action is localized and more persistent. Healing is free from pain or reaction, and is completed more quickly than when the electro-cautery is used. *Caustic.*

TUMENOL, a sulphonated preparation of hydrocarbon, may be used in three forms: 1. Tumenol itself—a dark-brown or brownish-black liquid; 2. Tumenol sulphone, an aromatic syrupy liquid; 3. Tumenol sulphonic acid, a black powder, bitter, odorless, soluble in water. It is especially recommended for the itching of eczema and other forms of dermatitis, prurigo, and pruritus, in the form of a 10 per cent. tincture, with a menstruum consisting of equal parts of ether, rectified spirits, glycerin, and water. It has not the penetrating anti-parasitic and absorption-promoting properties of ichthylol, and is, therefore, not of service in erysipelas or in the local treatment of exudation or infiltration in which ichthylol is so useful. Moist compresses soaked with from a 2 to 5 per cent. solution of the sulphonic acid are serviceable in the treatment of acute recurrent eczema of the hands and face. In the form of a paste, of from 5 to 10 per cent., tumenol oil proved more effective than the simple zinc paste, not only in eczema, but in superficial ulceration, impetigo, and pemphigus. *In dermatology.*

CLINICAL MEMORANDUM.

TWO FATAL CASES OF OBSTRUCTION OF THE COMMON BILE-DUCT.

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THE two cases that I herewith report are interesting because both of their unusual termination and the therapeutic lesson that they teach. They were seen at the Philadelphia Hospital in the ward of Dr. J. B. Walker, by whose kind permission this publication is made. By one of those strange coincidences so commonly encountered, the patients occupied adjoining beds, and died within a few days of one another.

It is not uncommon to find biliary calculi at autopsies in cases of death from various causes, but death as a result of occlusion of the common bile-duct in connection with cholelithiasis is not common, while death following acute occlusion is rare.

One of the cases involved a man, seventy-seven years old, of feeble intelligence, with emphysematous lungs, atheromatous vessels, and degenerate kidneys. All that could be learned was that the jaundice, which had existed for several months, had set in suddenly with vomiting. For a considerable time the man presented typical "hepatic intermittent" fever, with irregularly-recurring rigors, pyrexia, and sweats. The stools were pale. The persistence of the jaundice, notwithstanding energetic medication, made probable the existence of some form of profound mechanical obstruction, the precise charac-

ter of which remained undecided. The patient died of asthenia, the jaundice having continued for at least three months. At the autopsy, the gall-bladder was found to be dilated, and presenting numerous diverticula; during the manipulations it ruptured, giving exit to about ten ounces of a fluid of milky appearance and a large number of whitish gall-stones, varying in size from that of a bean to that of a pea, of which forty-one were collected. The liver was moderately enlarged; the cystic duct and the hepatic canals throughout the organ were dilated and contained the same kind of milky fluid as was present in the gall-bladder. The lumen of the common bile-duct was obliterated at the junction of the cystic and hepatic ducts. In this situation, the biliary passages were adherent to the duodenum. Beyond, the common duct was patent to its point of entrance into the duodenum. The condition suggested the previous existence of obstruction of the common duct by a calculus, with ulceration, adhesive inflammation, perforation into the duodenum, escape of the offending calculus, and cicatricial occlusion of the common duct.

In the second case, a man, forty years old, previously in good health, following the ingestion of cold water was suddenly seized with severe abdominal pain, nausea, and vomiting. The temperature rose to 103.6° , for a few days oscillated about that figure, and subsequently slowly declined. Jaundice was from the first marked, and grew more intense. The patient became quite delirious. Treatment by means of mercurials and sodium phosphate was of no avail, and on the tenth day the patient died. At the autopsy, the liver was found to be enlarged, weighing six pounds. In the left lobe was a small, fluctuating area that, on incision, gave exit to a dirty yellowish fluid, exposing dilated canals and cavities. Section of the liver at various points permitted the escape of fluid of the same kind, in less quantity in the right lobe than in the left. The gall-bladder was contracted to the size of a large marble. It contained brownish fluid and fragments of a greenish color. The hepatic ducts were dilated. At the commencement of the common duct loosely lay a "mulberry" calculus of cholesterol about as large as a walnut. The pancreatic duct was distended with fluid.

It seems probable that in both of the cases reported death resulted from cholelithiasis, and the deduction is likewise obvious that in both life might have been saved by operative interference. In either case, the provision of a means of escape for the bile would have constituted at least a palliative measure. In the first, radical treatment would have necessitated the performance of cholelithotomy followed by cholecystenterostomy; in the second, cholelithotomy might easily have been followed by suture in the line of the incision. The obscurity of diagnosis scarcely constituted a legitimate contra-indication for operation. Exploratory incision would have removed all doubt. The positive information thus to have been gained would have compensated for any risk incurred.

MEDICAL PROGRESS.

Heredity Chorea.—SINKLER (*Medical Record*, 1892, No. 11, p. 281) reports three additional cases of so-called hereditary chorea. He concludes that the affec-

tion, while resembling Sydenham's chorea, differs in so many of its features that it is essentially a distinct and separate affection; that while, as a rule, there is remarkable uniformity in the symptoms presented, there may be variations. Thus, the disease may appear at or before puberty. It is not an invariable rule that if the disease fails to appear in one branch of the family the descendants of that branch have immunity. The arrest of the movements by voluntary effort is not a distinguishing feature of hereditary chorea, as in some cases voluntary effort aggravates the movements, and there are many cases of Sydenham's chorea in which voluntary effort for a time arrests the movements. Chorea among the adult insane is not hereditary chorea with insanity. The evidence at hand indicates that hereditary chorea depends upon degeneration of imperfectly-developed cells in the motor tract or in the cerebral cortex and in the spinal cord.

SCHLESINGER (*Zeitschr. f. klin. Medicin*, 1892, xx, 1, 2, p. 127) reports three cases of hereditary chorea from the clinic of Notthnagel, at Vienna. He considers the affection a distinct one, usually appearing in adult life, although some cases appear early. As a rule, the transmission is from generation to generation; exceptionally, a generation is skipped. In some generations the affection may be replaced by profound hysteria. The disease is progressive. Treatment with arsenic is rarely successful.

Intermittent Influenza.—KORNBALM (*Zeitschr. f. klin. Medicin*, 1892, xx, 1, 2, p. 160) reports the observation of seven cases of influenza presenting an intermittent type. The attack was preceded by a prodromal stage lasting from two to six days, and marked by languor, headache, anorexia, and malaise. After an initial chilliness, fever, for three days remittent in type, then intermittent, appeared, the symptoms being intensified during the exacerbations and moderating in the defervescence periods, though in neither instance in direct ratio to the temperature. The pyrexial periods were irregular in occurrence; sometimes two exacerbations appeared on the same day, but in the morning there was always afebrile. The intermittent stage of the disease lasted from five to nine days, without diminution in the intensity of the febrile periods; the latter of which were, in fact, preceded by chilliness, while defervescence was accompanied with sweating. In the exacerbations the pulse was accelerated to from 110 to 140 per minute, usually small and compressible, often irregular. In most of the cases nervous symptoms predominated, though catarrhal symptoms were also present. The prostration of the exacerbations was marked.

Fatty Heart with Slow Pulse.—WATTS (*British Medical Journal*, No. 1624, p. 334) has reported the case of a man, seventy-seven years old, who had had syncopal attacks and an attack of left hemiplegia. For two days, while abed, the pulse was 19, soft, regular, and synchronous with the action of the heart. On two other occasions the pulse was 28. On the day before death, during an attack of syncope, two beats of the pulse were felt at an interval of five seconds. A little later the breathing ceased, and the pulse was lost for a period of ninety-five seconds. Breathing was then resumed, and

the pulse was restored, with a frequency of 35 and 90, respectively. Two hours afterward the pulse—radial, carotid, and temporal—ranged between 12 and 13, being regular, fairly full, but readily compressible. At the autopsy the heart was found to be large, pale, flabby, laden with fat; it weighed seventeen ounces. The muscular structure of the organ was atrophied and parts replaced by fat. The cavities were dilated and empty.

Empyema of the Gall-bladder.—BÖGER (*Centralbl. f. Chirurg.*, 1892, No. 11, p. 227) reports the case of a woman, forty-eight years old, who presented a large tumor, principally occupying the left half of the abdomen. There was neither jaundice nor colic, but only a sense of distention. A diagnosis was not ventured. The patient at first declined operative interference, but subsequently solicited it, the growth meanwhile having increased in size. When the abdomen was opened the tumor was seen to be the enormously dilated gall-bladder. An incision evacuated a quart of purulent fluid. Two gall-stones, as large as walnuts, were found in the cavity of the bladder, and a third in the cystic duct. The last was removed with some difficulty. The gall-bladder was stitched to the abdominal wall and the wound was permitted to granulate. The ultimate result was entirely successful.

The Influence of the Gastric Juice upon the Virus of Hydrophobia.—WYRSKOWSKI (*Archiv für veterin. Wissenschaft.*—*Wratsch.*, 1891, No. 38) has demonstrated that the gastric juice is capable of neutralizing the toxicity of the virus of hydrophobia. For this purpose he prepared three test-tubes: one containing egg-albumin and gastric juice, and each of the two others an emulsion of the medulla of a rabbit dead of hydrophobia, the one with, the other without, the addition of gastric juice. A number of animals was inoculated beneath the dura mater with material from each of the tubes. Those treated with the digested albumin remained unharmed; of seventeen animals treated with the undigested medullary substance, all died; while of twenty-one treated with the digested medullary substance, all survived.—*Centralbl. für Bakteriol. u. Parasitenk.*, 1892, No. 11, p. 349.

Pigmentation of the Skin from the Use of Arsenic.—FÖRSTER (*Berliner klin. Wochenschr.*, 1892, No. 11, p. 262) reports a case of chorea in which brownish pigmentation of the skin appeared after the prolonged therapeutic use of arsenic. The withdrawal of the remedy was followed by disappearance of the discoloration.

THERAPEUTIC NOTES.

The Employment of Pilocarpine for the Relief of Deafness.—FIELD (*British Medical Journal*, No. 1631, p. 701), who was perhaps the first to recommend the employment of pilocarpine in the treatment of labyrinthine deafness, insists that the cases must be carefully selected. He maintains that labyrinthine deafness is not common. The larger number of patients that hear better in the midst of noise derive little or no benefit from the sole use of pilocarpine. Hearing is best tested by means of a large tuning-fork with a wooden handle. The treat-

ment may be employed in cases in which bone-conduction is defective. Syphilitic patients are usually much relieved; in a given case, the possibility of hereditary syphilis is to be borne in mind. Cases in which the deafness is worse after catarrhal inflammations are mostly not suitable. Patients that hear when spoken to distinctly, or in whom the deafness began with a difficulty of discriminating sounds, or who cannot make out general conversation, who hear worse when tired, nervous, or out of health, are more promising cases. In arriving at a diagnosis, the state of hearing, as tested by the watch and the condition of the drum-head, should be noted. Some cases of marked aural vertigo are benefited by treatment with pilocarpine. If disease of the middle ear is associated with disease of the internal ear, vapors should from time to time be injected through the Eustachian catheter. The usual mode of administering pilocarpine is the injection into the arm of gr. $\frac{1}{2}$ of the nitrate, gradually increasing the dose to gr. $\frac{1}{4}$. The injection is followed by the administration of half a dram of ammonium carbonate in water. The patient is well covered and copious diaphoresis and salivation take place. In case of faintness or other discomfort, brandy is given.

The Treatment of Epilepsy.—HUCHARD (*Rev. Gen. de Clin. et de Thér.*, 1892, No. 9) insists that in case the bromides fail in the treatment of epilepsy it must be determined that the lack of success does not depend upon the mode of administration. For epileptics, the bromides must be looked upon as food; about thirty grains should be given three or four times daily. If the attacks occur at night, the largest dose should be given a short time in advance. If the disease has appeared late in life, especially if there is a history of syphilis, iodides should be conjoined with the bromides. Should cutaneous eruptions appear, an intestinal antiseptic, such as naphthol or betol, may be administered. If, despite all precautions, the bromides are not well borne, borax may be tried. The agent must be free from all impurity. It is insoluble in alcohol, slightly soluble in water, and more soluble in glycerin. It sometimes gives rise to derangement of digestion, cutaneous eruptions, emaciation and conjunctivitis. If diarrhea occur, bismuth salicylate may be given. Borax is said to be the more useful in symptomatic epilepsy, the bromides in neurotic epilepsy. Treatment with borax is begun with daily doses of from seven and a half to fifteen grains, which are gradually increased to sixty, seventy-five, one hundred and twenty, and even one hundred and fifty grains. If large doses are not successful, the remedy should be withdrawn. If the attacks are controlled, the dose may be reduced to sixty grains. The remedy is given morning and night. Should the bromides and borax fail, amylen hydrate may be employed in doses of from ten to thirty grains three times daily.—*Centralbl. f. die gesammte Therapie*, 1892, x, 4, p. 209.

For Laryngismus Stridulus.

R.—Chloroformi	gtt. x.
Glycerini	3jss.
Aqua	3j.—M.
S.—A teaspoonful every thirty minutes.— <i>Journ. de Méd. de Paris</i> , No. 13.	

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

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SATURDAY, APRIL 23, 1892.

PROFESSIONAL IDEALS—A POLITICAL PARALLEL.

It has been suggested that, at this season, when several thousand young men are passing from student to practical medical life, a word to them would be appropriate as to the proper aim of effort and the best method of attaining legitimate professional success. It might pessimistically be replied that *facere* will depend upon *esse*, that whether physician or not the man will do that which his essential nature commands him to do, that his life will be the realization of his inherited character. But the believers in fatalism are commonly those that want a lame philosophic excuse for indulgence of desire, when there co-exists a half-smothered subconsciousness that the desire is selfish and could be overcome if the will were strong. In opposition to this it may be truthfully urged that at the beginning of life a large measure of free-will obtains, and that in youth when unselfishness, moral fire, and enthusiasms are more potent, a conscious choice and purposive endeavor often set the beat of a life-song, and the step of a life-march.

The substance of that which one may advise is easily summarized in a very brief word, but its realization may be rendered more clear by a political parallel.

There are few sadder memorials of the tendency toward human degeneracy than the history of some of our common words. Take one of many: At one time the word "idiot" had absolutely no reproach in it; it was simply the name of a private citizen as contradistinguished from a public officer or personage. It soon came to pass that one having any large capacity interested himself in public affairs; from this the honorable man was he that labored for the public good, and the idiot was he that did not care for the common weal, and hence was stigmatized as selfish, narrow, etc. From this point the word idiot was more and more limited until finally it has come to be applied to one utterly devoid of reason and self-government, and we can now make the term but little more offensive by the adjective drivelling.

In American public life we are witnessing the same metamorphosis of the once honorable words politics and politician, but in the strange fatality of historic change the process with us is the reverse or obverse of that passed through by the word idiot. The private citizen at present remains unnamed and unconsidered, whilst the public man, the politician, is doing all he can to make his generic title the synonym of whatever is cunning and selfish and unprincipled. How many centuries will it take to make the word politician applicable only to the "safe-cracker," then to the vilest pickpocket, successively to the demented beggar, or the anarchist paranoiac? Certainly very few centuries will be needed at the present rapid rate of change. To call a decent man a politician is already about as great an insult as is possible.

The ugly thought at once presents itself, however, that the method of politics is too often and too widely the American ideal. It is true we have all grown so cunning as to shirk the word whenever we can. If our political or commercial hero happen to unite in himself, in exceptional measure, the three mundane virtues of cunning, selfishness, and unprinciple, we euphoniously call him a great statesman or an astute financier. The little statesman is the ward-boss, and the little financier is the bucket-shopper and commercial gambler of a thousand malodorous types. From "heeler" to governor, from gutter gamin to railroad-wrecker and stock-waterer, the aim is to "get a pull," to get on, literally by hook or by crook.

What is so common a psychologic feature of the modern could hardly fail to have transplanted

itself into the inviting field of medicine. It is the great national sin and danger, and also the great medical sin and danger. The trust of the patient in his physician, his helplessness in the hands of the physician, the physiologic ignorance of the people engrafted upon their gloomy medieval inheritance of magic-mongering and quackery, make them easy prey for the politician-doctor. And this Mephistophelean gentleman is thoroughly at home amongst us—coolly asking, with his elder brother Tweed, "*What are you going to do about it?*" These impudent quacks are the quacks *within* the profession, because quackery is an affair solely pertaining to the use of medical opportunity, not to the acquirement of medical knowledge and skill. Sometimes, though rarely, the most execrable quacks are skilful physicians. It is not that they are not medically capable, but that their medical capacity is used as a tool, not as an end; as a means for selfish advancement, not for a humane purpose. If not curing will bring more money than curing, they will postpone cure until the patient has been sufficiently bled—financially—and fictitious cure is often made to take the place of real cure. These are the sneak advertisers, who are always seeking notoriety by the thousand devices of the political trickster. Every thought of their lives is how to gain new patients, and as one of the means to this end is to cure disease, they will even take the patience to try to learn this art. A consoling fact, however, is this, that therapeutics pursued in this way generally misses its object. It is to the genuine, not the simulated, love of medicine; it is to the conscience burdened with responsibility, not to the conscienceless; it is to the lover of his patient, not to the lover of self, that comes the subtle intuition and discrimination, the blessed healing power that brings health out of disease. The wise patient will not always choose the famous and popular physician. Notoriety is usually better for the practitioner than for the patient.

To the young physician standing at the parting of the ways, the ideal of quick popularity and brilliant success so often, too often, attained by the politician-doctor, offers a powerful temptation. The other method is undoubtedly slower, but it has the certain advantage of being surer. It may be safely asserted that in general government and legislation, the dominion of the corrupt boss and the typical politician is distinctly on the down-grade and brakeless. Despite his ignominious and

astounding success he is doomed. Not only will his name be anathema to future generations, but his present power is being swept away from him by the great wave of righteous indignation now swelling in the American breast. Just as physical civilization and social well-being make him and his methods incompatible and expensive, so the politician in medicine has had his day of proud blooming and early rotten fruitage. In medicine he is more out of place than anywhere else. The laws of physiology and pathology cannot be duped or long trifled with. Let us not be deceived by the examples in all our eyes of the success attending cunning, scheming, barter, self-seeking, and principlelessness. These men live in constant fear, duplicity, and suspicion. They are always seeking to make tools even of their friends. They know they are in the wrong, but they must plunge on in the chosen road.

The examples of success thus gained, however striking, are rare; the great bulk of the profession being made up of the other type—the men that love their work, who, before self-seeking, wish earnestly to foreend and to cure disease. It is not only the higher wisdom, but it is also simple worldly wisdom to class oneself with the larger and better professional brotherhood. The choice on entering, the resolve purely and sincerely made, now and here, matriculates the young alumnus into a post-graduate school whose diploma assures the love and honor of his fellowmen, and the best as well as the most enduring success. Don't sneer at sentiment; it is by it that we live, and it makes all good things; don't let the scoffs of the moral suicide turn you from the fact that morals and medicine must go together. The universe is made that way, and the sneerer finally comes around to the confession. In his heart every expert trickster wishes he had made the choice that is given to you, O young alumnus, to make!

ABDOMINAL AND UTERINE TOLERANCE IN PREGNANT WOMEN.

THE medical profession is indebted to HARRIS, of Philadelphia, for a most suggestive contribution to the literature of abdominal and uterine tolerance in pregnant women. This well-known writer has for some time been instrumental in providing obstetricians with information regarding the Cæsarean operation, and his present contribution is especially valuable. By painstaking and accurate research, he

has collected twenty cases in which pregnant women have sustained penetrating wounds of the abdomen and uterus; the results in each case having been carefully ascertained, and being substantiated by reliable witnesses. To summarize the conclusions reached from an analysis of these cases, it may be stated that healthy women, leading lives that take them much in the open air, and engaged in work that develops the muscular system, frequently recover from such serious accidents as those described by DR. HARRIS. The agencies that inflicted the injuries were: the horns of cattle, sharpened wooden utensils, revolver-bullets of small caliber, knives, and other penetrating instruments. In several instances, the injury was immediately followed by the birth of the fetus, and in many of these the children survived. When the accident occurs after the fifth or sixth month of pregnancy, the uterus is often freely opened, and the birth of the fetus may readily happen. In seeking an explanation for the remarkable tolerance manifested by these patients, we have another illustration of the familiar fact that recovery from operative interference depends very largely upon the condition of the patient's tissues and the power of resistance. Thus, a healthy farmer's wife may be gored by the horns of a bull, her child may be born upon the ground, and both may survive, while the rachitic dwarf, who has labored for some hours in parturition, and upon whom Cæsarean section is skilfully performed, dies shortly after, of exhaustion.

The practical lesson that DR. HARRIS so clearly emphasizes is this: that the scientific obstetrician should be so thoroughly aware of the abnormal conditions existing in his patient that when the Cæsarean operation is indicated, he will not wait until useless labor-pains have induced exhaustion, but will operate at the very beginning of, or just before, the labor. It is well, should the uterus be relaxed, to administer ergotine, by hypodermatic injection, a half-hour before the operation. Rapidity, simplicity, and cleanliness in operating will further contribute greatly to success. It is interesting, in this connection, to note that under such conditions children have, in several cases, been born by successive Cæsarean operations.

A SCHOOL OF PATHOLOGY FOR PHILADELPHIA.

THE one element in which medical education in the United States has heretofore been most of all deficient is practical pathology. Efforts, all praise-

worthy and some successful, are making in various cities and institutions for the improvement of the methods of instruction and the enlargement of the facilities offered to students for the attainment of a solid foundation in this important branch of medical knowledge.

Philadelphia, however, though not a laggard in the movement, does not as yet offer to students and to physicians, all the facilities for pathologic study and research that are demanded if in these days of rapid progress she is to retain her proud position as the center of medical education in the United States; and yet she has at her command resources that, properly utilized, would place her in the front rank of pathologic instruction. The Philadelphia Hospital should be made the nucleus of a great school of pathology, independent of any of the established colleges. A systematic course of lectures and demonstrations by the official pathologists could be given at hours so arranged as to be convenient to the greatest number of students. The material is ample. The facilities exist. It seems criminal that both should not be utilized to the utmost. The movement could only be productive of good, and it would come to be wondered that it had not long before been organized. In this way, one reason of going abroad in order to obtain a solid pathologic foundation upon which to build a substantial clinical superstructure would be removed.

In operative surgery, in clinical medicine, in therapeutics, in gynecology, in obstetrics, in ophthalmology, in laryngology, in neurology, in dermatology—in a word, in the entire field of practice, Philadelphia possesses in each department at least one man whose superior is not to be found anywhere, and numerous others who have the ability, the ambition, and the facilities for earnest and honest clinical teaching.

Let our colleges join with the civic authorities in establishing, as they can, a great school of pathology at Blockley, and the result will be once more to place Philadelphia foremost in medicine upon the Western continent.

SELECTIONS.

NATIONAL CONFERENCE OF CHARITIES AND CORRECTION.

UNTIL the present century, the policy of Europe, in dealing with crime and pauperism, was the best possible, if the object had been to propagate and increase them both. The States of the New World necessarily

copied many of the methods of the old. Unfortunately, along with much that was true and wise, they copied and perpetuated many old blunders. But with the advance of modern thought, especially with the enormous widening of the sphere of scientific knowledge, have come new and better ways of dealing with the defective, the criminal, and the pauper. To spread abroad and make popular the better ways in charity and reform is the object of the National Conference of Charities and Correction, which meets annually in one or other of our great cities, and will hold its Nineteenth Annual Session in Denver, Col., next June. It combines the best philanthropy of all creeds and all shades of political opinion upon the broad platform of humanity. Its program for the year has just been issued, and is an interesting paper, its topics covering many of the social problems of the time. The membership of this conference is unique. It has no salaried officers and no selfish benefit to offer to anyone, so its doors are open to all the world; whosoever will may come in, on a footing of the most perfect equality. The fact that you are interested in its work, makes you a member, and entitles you to a seat and a voice in its discussions. Anyone desiring further particulars as to reduced railroad fare, hotel accommodations, etc., may address Alexander Johnson, secretary, Indianapolis, Ind., who will send circulars and answer inquiries.—*Science*.

**THE PERPLEXITIES OF HONEST MEN IN
THE PROFESSIONS OF PHARMACY
AND MEDICINE IN REGARD TO
"BLIND PREPARATIONS."**

WE cannot refrain from alluding to an old topic again, because of its increasing interest.

The attitude of the medical profession to the chemist and pharmacist of to-day is an anomalous one, which has been increasing in perplexity year by year, until the day when there will have to be a protocol between the two professions with a view to the settlement of the difficulties is not far distant.

Every new article, pharmaceutical or chemical, is now patented and copyrighted, or protected by some bewildering or misleading name, by a class of chemists and pharmacists who a few years ago would have disdained such a course as much as Jenner would to have made vaccination a secret process.

Here are only a few examples of the kind: Two chemists, one the chief, the other his assistant, discover in the laboratory a sweet principle entirely different from the sugars or glycerin, and name it saccharin. It was raised from the position of a chemical curiosity to that of a medicinal agent, principally as a substitute for sugar for diabetics. The assistant goes to Germany, secures a patent on saccharin, ignoring the interest of his chief, and pursues the manufacture of it as a commercial enterpris. Everyone using saccharin, then, is using a proprietary article, and paying a royalty.

Take the case, also, of chloroform, to which we called the attention of our readers before. We believe that the great bulk of chloroform consumed in this country at present is wholly, or in part, produced by a patented method, and no one could compete, either in purity or in price, who holds on to the old processes.

That independent fortunes have been made by advertising diligently and expertly, keeps a vast army of eager seekers after gold alert to the chances that may lead them into the happy road to good luck. The boldness of some of these men is very great. They set about at once to dupe the medical profession, knowing that in proportion to the credulity of the doctors will depend the sales of the vaunted new discovery. Many of them are able to come with arguments and demonstrations that are all but incontrovertible, for some of these eager hunters for gold are men of learning or experience, broken down by former unfortunate ventures, or unwilling to wait the slow process, which, when patiently pursued, leads only to a moderate competency. They know another very important thing, that there is a code of ethics acknowledged by educated physicians, and some kind of artful reasoning must be used to silence the consciences of those who are faithful to their obligations—this class being by far the majority—and to this they apply their talents, too often with success. Many are the trials of faith the medical editor has to suffer at the hands of some of these sharpers, when he is called to discriminate between the manufacturer who is honestly working to supply the needs of the physician, or dishonestly trying to palm off a worthless article.

One would think that the conferences of the Committee of Revision of the Pharmacopeia of the United States would be a good point from which to originate a plan that would settle all the difficulties, but so far the Committee has been able to see no other way than to accept "the code," and abide by it. In the meantime, good and loyal physicians are trying remedies about which they can only learn that it belongs to a certain "chemical series," an intimation practically as mystical as naming it an active principle of some plant of which he never before heard. The profession has already had a practical illustration of this in that therapeutical farce, the rise and fall of "gleidtschine," and it will be at the expensive burial of many other abortions, until the true men of both professions clarify the atmosphere.

It is largely a deficiency of education in certain elements of *materia medica*, *pharmacy*, and *chemistry*, that makes the profession such an easy prey to pharmaceutical charlatans, and it is almost entirely due to the strictly honest work of a few manufacturing chemists and pharmacists that the medical profession has such a list of choice medicaments to enrich our armamentarium.

Our present standards need revision; doctors cannot be their own druggists without neglecting duties that appertain more essentially to their profession, but this would be a far better solution of the difficulty than to submit to being taught therapeutics and *materia medica* by every dealer who has the money to advertise and keep a smart drummer on the road.—*The North Carolina Medical Journal*.

COFFEE-LEAF TEA.

MR. WILLIAM SOWERBY, the veteran and distinguished Secretary of the Royal Botanical Gardens, writes to the *British Medical Journal* the following note on his suggestion for adding to the number of alkaloid

beverages by the introduction of coffee-tea: When walking in the Gardens of the Royal Botanical Society, Regent's Park, and noting the extent of the collection of living medicinal and economic plants of all climes and countries there brought together in one spot, it must have occurred to all of us how very small a number of plants, out of the vast store which Nature has provided, man has bound to his service, and the yet fewer he has taken the trouble to cultivate. During the march of the last half-century in science, medicine, mechanics, steam, and electricity, how little has been gained from Nature's stores. The artificial culture of cinchona is, perhaps, the most noted of the few. Again, any step in eating, drinking, dress, is so governed by habit or fashion that he must be a bold man who tries to turn the current. This is illustrated in tea-drinking. Perhaps there is no one habit so universal; each people has its peculiar tea or closely allied beverage, and most of these have continued the same for many ages. In one it is cocoa, in others, coffee, and in many, tea; in a few special quarters of the globe nothing but *mate* is thought fit to drink, but in only one small district is coffee-leaf tea used. Now we all know that these beverages are found by man to be pleasant and agreeable to him by reason of their containing a peculiar principle called *theine*; but yet we do not always select for our use the part of the plant containing the largest percentage of *theine*, or cultivate the special plant with a view to afford us the most valuable part. For example, in coffee the leaves are said to contain 1.26 of *theine*, and the berries only 1 per cent., and yet over 110,000,000 of men use the berries, and only 2,000,000 the leaves of coffee, although 500,000,000 use the leaves of tea.—*Science*.

DISTRICT OF COLUMBIA MEDICAL-PRACTICE BILL.

THE District of Columbia medical-practice bill bids fair to become a law. The homeopaths and the regular profession are enthusiastically united in its favor. The "vivopaths" and "botanic healers" are opposing it. The arguments of these latter, however, have impressed the Congressional sub-committee with the serious necessity for something to regulate them beside a writ *de lunatico inquirendo* and a prosecution for obtaining money under false pretenses. The champion of the "botanics" claimed, to the amazement even of the Congressional committee, hardened by frequent contact with cranks, that a healthy child, if treated according to the botanic method, need never be sick; that it could be educated to work and go on forever, free from all the various ills, if only his system were accurately and diligently followed. The "vivopath" claimed that thousands of people now die because physicians do not know what to do for them. He claimed to be able, in connection with his White Cross University of Science, to cure these people who are consigned to their gloomy fate by reason of the ignorance of his colleagues. As a clincher for his argument, the doctor exhibited a bottle of life-perpetuating elixir and a box of powder of some sort that promised wonders. These visible adjuncts of a claim to invisible power created a very strong belief in the Congressional committee that the bill was a necessity.

—*The Medical Standard*.

CORRESPONDENCE.

THE DIFFERENTIAL DIAGNOSIS BETWEEN RÖTHELN, SCARLATINA, AND MEASLES.

To the Editor of THE MEDICAL NEWS,

SIR: As indicated by several recent communications in your journal, the diagnosis between Rötheln, scarlatina, and measles is by no means always easy, owing to the great diversity not only in the appearance of the eruption but also in the range of temperature of the, to us, newer disease—Rötheln or German measles, which in recent years has become quite common. *

In a limited epidemic that came under my notice last summer, the multiform character of its symptoms was well exemplified. The first group of cases occurred in a family consisting of a mother and four children, none of whom escaped the disease. I had attended several of the children some years before, while sick with rubeola, or common measles. In these five cases, the eruption bore a striking resemblance to ordinary measles, both in color and in the arrangement of the blotches in crescent form. The points of differentiation appeared to be: Less efflorescence of the skin between the blotches; the rash, though very copious on both trunk and extremities, being more discrete than in measles, with an equally copious eruption. Added to this, as diagnostic points, were: The slight degree of constitutional disturbance; the almost entire absence of catarrhal symptoms; the moderate temperature—not over 101° in any case—and especially my personal knowledge of previous attacks of ordinary measles.

Widely different were the characteristics presented by the second group of cases, especially as regards the appearance of the eruption. In Case I of this group, not related to the previous group by contagion, I found a boy of nine years, of excessively nervous temperament, ill with a mild form of fever; temperature 102°, pulse 120. The chest and back were covered with a uniform scarlet efflorescence, interspersed with minute points of a deeper red hue, spreading subsequently over the abdomen and lower extremities, leaving the face nearly exempt; the whole presenting an appearance practically indistinguishable from scarlatina, of which the diagnosis was made, as probable. The tongue was moist and coated, with papillæ enlarged, but did not present the intense redness usually found in scarlatina of moderate severity; nausea and vomiting were present in a marked degree; also moderate inflammation of the throat. By the third day the rash had begun to fade from the neck and chest, but remained longer upon the back, abdomen, and lower extremities; the subsidence of the eruption was followed by desquamation of a furfuraceous character, except on the hands, where the skin peeled off in small flakes and strips; itching during desquamation was intense, but was not complained of during the height of the eruption; no albumin was found in the urine; nor did any of the sequelæ common to scarlatina develop. This case was at the time believed to be one of a mild form of scarlatina, until the irregular course of subsequent cases led to a modification of the diagnosis.

In Case II, a lad of fifteen presented, on the first day, an evening temperature of 104°, pulse 120; the rash, which was simultaneous with the invasion of the other

symptoms, had the same general character as in the preceding case, except that on the abdomen and lower extremities it occurred in patches of considerable area, leaving the adjacent surfaces free; but little of the rash appeared upon the face. The next morning, about sixteen hours subsequently to my first visit, the temperature had fallen from 104° to 102° ; the pulse was 110. The temperature continued to fall, though it fluctuated between 99° and 101° throughout the progress of the case; the fauces were intensely congested, while the tonsils were swollen and partly covered with a fibrinous deposit. The tongue was moist; heavily coated at first, but at no time did it present the peculiar redness of the tongue of scarlatina. The temperature in this case was higher than I have seen anywhere recorded in Rötheln, but the pyrexia lasted only about twelve hours, and was not again approached during the progress of the case. Desquamation occurred, as in the preceding case, with itching, which was much complained of after the disappearance of the rash.

In Cases III, IV, and V, the eruption was of the character described in the preceding cases, but partial in its distribution, as in Case II; the temperature did not exceed 102° , and the cases were all characterized by the short duration and mildness of the symptoms.

It will thus be seen that the diagnosis between certain cases of Rötheln and scarlatina simplex may be exceedingly difficult, if not impossible; but upon studying the whole group of cases we find certain features common to all, that materially assist us, viz.:

1. Shortness of the acute febrile stage, even when the initial symptoms were of considerable severity, as in Case II.
2. Irregular distribution of the rash in all except Case I.
3. Absence of scarlatinal redness of the tongue.
4. Absence of the frequent pulse.
5. Absence of nervous symptoms.
6. Absence of albuminous urine.

While it must be freely conceded that the diagnosis in these cases has not been demonstrated absolutely, the weight of evidence appears to be in favor of that of Rötheln rather than of scarlatina.

While these cases were in progress, and shortly after, I heard from different sources, both lay and professional, of cases of sickness variously diagnosed as scarlet fever, Rötheln, and roseola; of course, the latter disease is entirely excluded by the contagious character of the epidemic; while, as health-officer, I am in a position to know that no fatal cases of scalatina were reported during the prevalence of the epidemic described.

The practical importance of an absolute diagnosis in such cases is much diminished by the acknowledged contagious nature of both diseases in question; so that isolation and other precautionary measures should in all cases be strictly enforced.

CHARLES H. CHUBB, M.D.

PALMVILLE, NEW YORK.

RELIANCE UPON THE OPHTHALMOMETER.

To the Editor of THE MEDICAL NEWS,

SIR: In an article appearing in your journal of April 2d, taken from the *Therapeutic Gazette* of March 5th, some statements are made that seem to me to hardly

express the true position of our science to-day, in the relative value of the different methods employed in the estimation of refractive errors.

However assured we may feel of the superiority of our methods over those of our neighbors, we ought to feel our way carefully. I am so often reminded of the question once put to me, when giving testimony of an expert character, by the counsel for the opposite side: "Doctor, is medicine an exact science?"

Medicine will be exact just in accordance with the exactness of its investigators and the measures they employ. And it seems to me that we ought not to be too hasty in either our support or condemnation.

In estimating refractive errors the value of the measure employed will depend upon the seat of error.

True astigmatism, by which I mean actual and permanent alteration in the curvature of the refractive body, is pretty generally conceded, I think, to have its situation in the cornea. True, it may occur in the effort of Nature to overcome the real trouble, and so give us lenticular astigmatism.

Lenticular astigmatism must always occur when Nature succeeds in overcoming corneal astigmatism. But this secondary error is seldom, if ever, permanent. If it were, astigmatism would be a cause of asthenopia far less often than it is. Mydrastics are only necessary in this class of cases to relieve the secondary muscular effort. And as this effort is maintained only by the utmost strain, the muscle will readily relax when relieved by the proper glass.

Time was when mydrastics were necessary to tell us the proper glass and its axis, but since the introduction of the ophthalmometer of Javal and Schiotz, we have a means of estimating these more accurately and rapidly than we have ever had before.

True, there may be cases in which we may be compelled to resort to mydrastics, as in cases of persistent spasm of accommodation, and in some cases of mixed astigmatism. But, as we all know, even mydrastics may fail us here. We do not speak from a theoretic standpoint, for in our clinics at the New York Post-Graduate School and in the Manhattan Eye and Ear Hospital we have proof of what we say in cases almost without number. Nor do we speak from a desire to fight merely for the sake of fighting, but because of a genuine love for our science, and a desire to elevate and advance it.

The value of retinoscopy, I have always maintained, was depreciated by the fact that lenticular astigmatism endeavors to overcome the error.

The ophthalmometer simply tells us that we have corneal astigmatism, its amount and axis, and experience has taught us that we can rely on its finding. We have to resort to the ophthalmoscope to ascertain the kind. Mydrastics may perhaps be very acceptable to us when we are in doubt. Even Dr. Roosa, who is enthusiastic on the subject, will, I think, admit this.

My views were put forth in the March number of the *Post-Graduate*, to which I beg to refer you.

I feel, Mr. Editor, that the article quoted in your able journal does not properly define our position. We do not entirely disregard mydrastics *in toto*. It is possible that we may come to that, but, after a reasonable trial we feel justified in saying that, given an ophthalmometer and an ophthalmoscope, in the vast majority of

cases mydriatics are unnecessary in estimating errors of refraction.

Very truly yours,

FRANK VAN FLEET.

NEW YORK.

[We insert the foregoing in a spirit of fairness, but feel compelled to add that, in our opinion, it contains so many assumptions and errors as to render its conclusions entirely untrustworthy. The article in the *Post-Graduate*, and that of Dr. Roosa in a late number of the *Medical Record*, appear to us still more full of astonishing fallacies. THE MEDICAL NEWS, however, cannot spare space to expose them or to continue the discussion. Time will prove that reliance upon the ophthalmometer alone is to the last degree unscientific, and however much in the interest of the physician, is not in the interest of the patient.—Editor of THE MEDICAL NEWS.]

A KEELEY CURE.

To the Editor of THE MEDICAL NEWS,

SIR: Some weeks ago, on the eve of an absence from home, I got a letter of inquiry from a physician of your city relative to the "Keeley Cure" for whiskey and opium. I cannot find the letter or recall the name of the physician, hence I send my reply to you, hoping that I may thus reach my correspondent.

I am deeply interested in this matter, as I was for fifteen years a hard drinker, addicted to regular indulgence daily and to periodic sprees.

I have been a sober man for a year, but it was only after returning from the *third trial* of Keeley's so-called cure, and realizing as I sobered up that there was no power on earth that could help me unless I had *will-power* to resist the accursed appetite. I know I can't take one drink at any time or anywhere, without going into a spree that will last as long as my stomach does not revolt. I know further, that of late years every spree results in serious affection of limbs and muscles, indicating a tendency to paralysis. The appetite comes on every once in a while, but supported by the inner consciousness of these impending results, I have been able thus far to resist, and at each recurrence I find that the appetite is less powerful in strength and endurance of time.

I never had delirium tremens, but in all other respects I have tested ineptitude to its depths. Keeley can do no good of any lasting character. All the notices you see are attributable to the zeal of new converts to the fraud. I was the same way until I went back the third time, and kept my eyes open, discovering the frauds and lies. On my last visit, out of 45 patients, I found 33 were there a second or third time, and 2 for a fourth. Each time I came away he pronounced me "*cured for life*," and I was *drunk* before I left Chicago. When I saw that I was gone beyond all hope unless I could control myself and resist, then and then alone I was able to resist. Keeley has a good tonic that puts the system in good condition; the *ennui* and dulness of Dwight force you to walk to kill time. He makes you sleep until you can eat and walk; and exercise, tonic, and quiet do the rest that is done. So if a man has *power* enough to summon his *will* to his aid and exercise his cool judgment, as in business, he may be able to hold out—but unless he can do this there is no help for him. I

have been to five asylums, so called, and in all could get what whiskey I wanted; *all are run for the money*, Keeley's especially. I enclose a slip from the New York *World*, which is common history of Keeley's graduate "cures."

Keeley does no more than any reputable physician can do if he can get the patient really desirous of relief, and get him to keep quietly away from temptation until he is sober and tonics have cleared out his system. There are a few exceptional cases, but they only prove the truth of my argument, that the captive once released and sound in body and head, resolves to keep free and fight for the mastery, and is never for one waking moment found off his guard.

It is a sad concession, but my own long experience and observation teach me that I am correct when I say there is "*no lasting cure for drunkenness except the solid will-power and eternal vigilance of the patient.*"

This is the naked fact. Keeley does not cure the appetite, and is a consummate fraud in all respects.

You can use this in any way you see fit, and can write to any of the banks here, or to the Mayor, Hon. Peter Keen, and investigate my reputation.

Hoping this may open your eyes to a thorough investigation.

I am yours truly,

SAM. MCKINNEY.

KNOXVILLE, TENN.

THE TREATMENT OF PNEUMONIA.

To the Editor of THE MEDICAL NEWS,

SIR: The old method of treating pneumonia was by bleeding; it was thought that the withdrawal of a certain amount of blood would reduce blood-pressure, and so remove congestion. It is now generally believed that this procedure does more harm than good, for, although in such treatment you reduce the blood-pressure, it must be remembered that one has taken just so much vitality from your patient.

Veratrum viride was next brought into use, and this was followed by the antipyretics, among which are quinine and the coal-tar remedies—all heart-depressants. Sometimes, alcohol and digitalis are used to strengthen the action of the heart, and so by its force to get rid of the congestion in an indirect way. These remedies certainly ought to be administered with the greatest discrimination, for an undue stimulation may act with injury to the patient.

A little over a year ago a new thought as to the treatment of pneumonia came to my mind: instead of throwing more work upon the heart, it would, if possible, be far preferable to remove the obstruction, since in mechanics this would be the most natural thing to do. If, for example, there were an obstruction in a water-pipe, instead of putting on more steam, we would try to remove the obstruction directly. As it is well known that the first stage of pneumonia is one of congestion, and as this is the obstruction, my aim is to remove this directly without a more vigorous stroke of the pump.

The following is my treatment: I first give a cathartic of calomel (10 grains) and a tablespoonful of castor-oil. I then apply a cantharides blister over the region of pain, commencing immediately with fluid extract of ergot, giving one dram every three hours, remembering that ordinarily six teaspoonfuls make one ounce, and by using

two of water and six of ergot, a teaspoonful makes a dram at a dose.

The action of ergot is to cause the constriction of the unstripped muscles, of which the coats of the arteries contain fibers. By this method the blood is forced away from the congested parts, and the heart is relieved. Quinine and antipyrin reduce the temperature without removing the cause.

I have had eight cases in which I have used this treatment, and in all congestion was removed in from two to four days, the temperature, respiration, and pulse in that time becoming normal, with rapid convalescence.

I have never used ergot except in the stage of congestion, for the reason that in all cases the disease was arrested before the lung was hepatised. If, however, I should see a case in which there was hepatisation, I would still give ergot, not because it would relieve the hepatised portion of the lung, but to prevent the further extension of the disease.

The blister and cathartic no doubt aid in removing the congestion.

Very respectfully yours,
GEORGE E. TALBERT, M.D.

BEAVER DAM, WIS.

NEW YORK.

AT the last meeting of the New York Academy of Medicine, held on Thursday evening, April 7th, Dr. L. Bolton Bangs read a paper entitled "Some Results of 'Withdrawal.'" The term "withdrawal," Dr. Bangs stated, has been used to indicate one of the methods of preventing conception. The extent of its use, and the ignorance of its effects, by both laymen and medical men, are deplorable. These effects vary according to the susceptibility of the individual and the frequency of the exciting cause, but they are sooner or later felt by all who practise this form of conjugal onanism. The results may not be observed until the cause has been in operation for months or years. During this abnormal performance of the sexual act, the man is watchful lest the ejaculation should take place within the vagina, and the wife is also watchful lest he should impregnate her. There is, therefore, none of that emotional freedom that happily married persons know. The act is prolonged and the ejaculation of semen is withheld as long as possible; the male organ is then suddenly, sometimes violently, withdrawn from the vagina, and the man suffers what the French call a *coup de piston*. Men who practise this form of intercourse are never sexually satisfied; they have a continual desire for coition and are never physically comfortable. The act is consequently repeated too often, always in the same unphysiologic way. The natural congestion of the prostate and the associated parts, which should be relieved immediately by the sexual act, becomes a chronic hyperemia, the bloodvessels become dilated, and changes in nutrition finally occur, indicative of varying grades of inflammation. As a result of the chronic hyperemia, the prostate and seminal vesicals lose their vital resistance and more easily become a field for the development of tuberculous foci.

It is difficult to get a definite statement from these patients as to their sexual habits. The habitual practice of "withdrawal" should be suspected when a man,

especially a married man, comes complaining of so-called neuralgia of the testicles or of various parts of the pelvis, or of pains similar to those experienced by men with stone in the bladder, and of frequent urination, particularly if there is no history of gonorrhoea.

Dr. Bangs related the history of two cases in which the act of "withdrawal" had been practised, in one case for a period of five years, and in the other for a period of eight years. In the latter case, among other symptoms, a severe posterior urethritis had been developed, which proved very difficult to cure. The treatment in these cases should not be severe. Strong solutions of silver nitrate seem to aggravate the inflammatory condition.

Dr. E. L. Keyes, in discussing the paper, stated that he has noticed the same symptoms as those described by Dr. Bangs. The harm is done not so much by the act of "withdrawal," but by the voluntary interference with the emotional functions.

REVIEWS.

A TREATISE ON THE LIGATION OF THE GREAT ARTERIES IN CONTINUITY, WITH OBSERVATIONS ON THE NATURE, PROGRESS, AND TREATMENT OF ANEURISM. By CHARLES A. BALLANCE, M.D., and WALTER EDMUNDS, M.D. Pp. xxviii, 584. London and New York: MacMillan & Co., October, 1891.

IT has not been our good fortune ever before to meet with so beautiful a specimen of medical book-making as the volume before us. The plates are beautifully done and the woodcuts are absolutely unsurpassed. It is both for publishers and authors a work of which they may well be proud. Moreover, the contents of the book are worthy of their setting. The authors have spent six laborious years, and the volume contains the record of a very large number of investigations, both in old and new directions, which are of the greatest value in settling several disputed points. In the first place, there is an absolute measurement of the diameter in cross-section of the principal arteries of the body when full and when collapsed. To supplement this, also, there are accurate drawings of the microscopic appearances of the wall of the various arteries, and very careful comparative measurements by other authors, as well as the present ones, as to the relative thickness of the internal, middle, and external coats of the arteries. Taken in connection with the pictures given of the effect of tight ligation of the arteries by rupture of the internal and middle coats, these are of the greatest value. The authors seem to have settled the question as to the amount of force that ought to be used in the deligation of the principal arteries of the body, and show that the conclusion that has been accepted since Jones's classical work on hemorrhage, in 1810, is certainly erroneous. For over three-quarters of a century it has been generally thought that a ligature should be tied tightly enough to rupture the internal and middle coats; but surely anyone after looking at the figures on page 408 would hardly venture to do so. The danger of secondary hemorrhage is most serious, and as the authors have shown on page 4, in 1606 ligations hemorrhage has occurred in

over 328 cases (over 20 per cent.); and that in 651 of these cases the deaths from hemorrhage, with the exception of cases of ligation of the superficial femoral, the external iliac, and the carotids, have varied from 51 to 100 per cent. They have shown both by the study of physiologic occlusion of the ductus arteriosus, etc., and by the study of pathologic occlusion by ligatures, from various authors and in their own operations, that simple but efficient apposition of the internal coat without rupture is the best method of deligation, and exposes to the least danger of hemorrhage.

Their suggestion as to the use of floss silk for the ligature material is certainly worthy of attention, and in the single case in which we have ourselves tried it we have been much pleased with its efficiency. The fluffiness of its surface favors the entanglement of the threads, and so prevents slipping, which, as they show, when the arteries are filled and with the ordinary blood-pressure, is very likely to occur. Moreover, they advocate what they call a "stay knot," and at least two ligatures placed side by side, so as to bring a larger portion of the intima into coaptation than is the case when a single ligature is applied. Whether this knot will stand the test of experience and be accepted by the profession remains to be seen. Certainly in the case alluded to it has answered every expectation. In seventy-one experiments which they have done the vessels have been permanently occluded by various methods without rupture of the coats.

After considering the nature of the arteries, they proceed to the pathologic processes involved in ligation, and show that it is the connective-tissue corpuscles of the middle coat of the arterial wall that proliferate, and that the clot is organized by means of these cells, and not through the leukocytes. Next follow studies of the conduct and fate of the clot, the coats, and the ligature, with a later study of the choice of the ligature, of the knot, and of the force to be employed. The authors have acknowledged the value especially of Warren's services in his admirable monograph on the *Healing of Arteries after Ligation*, and certainly on looking at the first three plates in this book and the figures on page 415 of Warren's book, we are struck by the similarity of the repair of these hollow vessels and the repair after fracture of the hollow bones. They justify the analogy that Warren draws between the callus of bone and what may well be called the internal and external callus in the healing of arteries.

The price of this book (\$10) will necessarily restrict the number of its purchasers, but we recommend to all surgeons who feel that they cannot purchase the book, that they at least take it from our lending libraries and read it carefully. It is one of those books of which other books will be made; or, in the words of Bacon, one of those books that are to be "chewed and digested."

SLEEP, INSOMNIA, AND HYPNOTICS. By E. P. HURD, M.D. (The Physician's Leisure Library.) Detroit: George S. Davis, 1891.

INSOMNIA is only a deuteropathic condition, but at times it assumes such paramount importance that measures directed toward its relief demand careful consideration. As the condition may be dependent upon so many and such varied factors, it is necessary that these causes be recognized, so that when possible their re-

moval may constitute the first step in treatment. To comprehend the influences that act to induce sleeplessness it is essential first to have a working conception of the processes that lead to sleep. That therapeusis will be the most successful that aims at a restoration of the normal by the removal of disturbing influences, and by the simplest measures supplements and reinforces the natural tendency to the resumption of a condition of equilibrium. As the conditions differ in different cases, so will the selection of the appropriate mode of treatment differ. The therapist must, therefore, have not only clear ideas of the normal and abnormal, of the physiologic and of the pathologic, but he must also have at command a knowledge of the various remedies to be employed under the same and under varying conditions, so that, should one fail, another may succeed. Within the limits that Dr. Hurd has allowed himself, he has presented the subjects with which he has undertaken to deal in a satisfactory and intelligent manner. His work bears the stamp of conservative thought. We cannot do better than quote his closing words: "Physicians should be very chary in prescribing the medicinal hypnotics. . . . Many of them, by constant or frequent use, become positively baneful. . . . First . . . try fully . . . all available hygienic resources."

SURGICAL ANATOMY FOR STUDENTS. By A. MARMDUKE SHEILD, M.D. (Cantab.), F.R.C.S. 12mo. pp. xii, 226. New York: D. Appleton & Co., 1891.

THIS is a book for students to use with the living model, and contains the substance of a series of demonstrations given by the author to students in course of preparation for the final examinations. Many allusions to operations and injuries give interest to the text, but the scope of the work forbids that it should be regarded as a guide to the operations in surgery. In this respect it much resembles Holden's *Landmarks*, Treves's *Applied Anatomy*, and similar works intended for the use of students desirous of acquiring a practical knowledge of anatomy that leads directly to future confidence as an operator. As such, the book is an excellent guide, and one that, on account of its accuracy, may be safely recommended to all who desire a work of this character. Many anatomic points of direct clinical interest, and many matters of real practical importance, will repay a careful perusal of this work.

BOTANY: A CONCISE MANUAL FOR STUDENTS OF MEDICINE AND SCIENCE. By ALEX. JOHNSTONE, F.G.S. With 164 illustrations, etc. Pp. xiv, 260. New York: D. Appleton & Co., 1891.

WE fear in this *résumé* of botanical science the life is squeezed out of it by too great compression. There are so many excellent and more complete handbooks on the subject that one cannot help wondering if the author's belief in the utility of such "concise notes" is not an error of judgment. The question also occurs, Why and in what way is it specially adapted "for students of medicine?" If the medical student seeks to learn something of the plants from which his most valuable and most used drugs (such e. g., as quinine, opium, belladonna, daturine, etc.) are obtained he will not find them even mentioned.

NEWS ITEMS.

The American Pediatric Society will hold its Fourth Annual Meeting in Boston, Mass., May 2, 3, and 4, 1892. The sessions will be held in the Boston Medical Library Association Building, 19 Boylston Place. The preliminary program is as follows:

Monday, May 2—First Session.

The President's Annual Address, by William Osler, M.D., Baltimore, Md.

"Experiments as to the Value of Nascent Ozone in Certain Forms of Diseases of Children, with Demonstration of an Efficient Generator," by Augustus Caille, M.D., New York City.

"Manifestations of La Grippe in Children," by Chas. Warrington Earle, M.D., Chicago, Ill.

"An Epidemic of Alopecia in a School of Girls," by Chas. P. Putnam, M.D., Boston, Mass.

Tuesday, May 3—Morning Session.

Discussion arranged by the Council on "The Relation of Rheumatism and Chorea," by C. W. Townsend, M.D., Boston, Mass.; M. Allen Starr, M.D., New York City; Samuel S. Adams, M.D., Washington, D. C.

"Nomenclature of Diseases of the Mouth," by T. M. Rotch, M.D., Boston, Mass.

Report of the Committee on Nomenclature of Stomatitis.

"Pseudo-Diphtheric Processes," by W. D. Booker, M.D., Baltimore, Md.

"Treatment of Diphtheria by Sublimations of Mercury," by Dillon Brown, M.D., New York City.

Tuesday, May 3—Afternoon Session.

"Typhoid Fever in Children under Two Years," by W. P. Northrup, M.D., New York City.

"Typhoid Fever in Children," by Chas. Warrington Earle, M.D., Chicago, Ill.

"Typhoid Fever in Infancy," by W. S. Christopher, M.D., Chicago, Ill.

"Acute Emphysema in Children, with Report of Cases," by F. Forchheimer, M.D., Cincinnati, O.

"Pre-tubercular Anemia," by B. K. Rachford, M.D., Newport, Ky.

Tuesday, May 3—Evening Session.

Business Meeting at the residence of Dr. T. M. Rotch, No. 197 Commonwealth Avenue.

Report of the Council and Election of Officers.

Reception of the Members of the American Pediatric Society, to be given by Dr. T. M. Rotch at his residence, Tuesday, 9 P.M.

Wednesday, May 4—Morning Session.

"Prevention versus Medication in the Management of the Diseases of Children," by I. N. Love, M.D., St. Louis, Mo.

"Syphilitic Broncho-Stenosis," by A. Seibert, M.D., New York City.

"A Simple Method for Clinical Examination of Breast-Milk," by L. Emmet Holt, M.D., New York City.

"Sacro-coccygeal Tumor in a child Three Weeks Old; Operation; Recovery," by F. Huber, M.D., New York City.

(Title to be announced), by Henry Koplik, M.D., New York City.

Wednesday, May 4—Afternoon Session.

"Two Tracheal and Bronchial Casts," by F. Huber, M.D., New York City.

"A Case of Death from Laryngismus Stridulus in Incipient Rhachitis," by Samuel S. Adams, M.D., Washington, D.C.

"The Value of Milk Laboratories for the Advancement of Our Knowledge of Artificial Feeding," by T. M. Rotch, M.D., Boston, Mass.

Action relative to the death of Dr. John Amory Jeffries, of Boston, Mass.

An Anesthetic Investigation has been arranged by the General Committee of the British Medical Association, for report at its annual meeting in 1892. The investigation is to be chiefly clinical.

An Auxiliary Anesthetic Committee, of which Dr. Laurence Turnbull, of Philadelphia, is chairman, has been formed in this country to aid the British Association, and is desirous of adding to the data of the General Committee a collection of such facts as are indicated upon a blank furnished by the committee.

The Hyderabad Chloroform Commission has not settled the question as to the mode of death resulting from chloroform, but it has stimulated the profession to seek the cause from the clinical standpoint.

The German Surgical Society will hold its twenty-first Congress at Berlin from June 8th to 11th, under the presidency of Bardeleben. The meetings will be held in the new Langenbeck building, which will be completed about June 1st.

Kussmaul, who recently celebrated his seventieth birthday, has contributed 10,000 marks (\$2500) to the Luise Sanatorium in Heidelberg, as an endowment in memory of a daughter that died in early youth.

Bacillus of Measles.—It is announced that Canon, at the Moabit Hospital, Berlin, has discovered the bacillus of measles.

Sir William Bowman, the distinguished histologist and physiologist and able surgeon, died at London, on March 29th, aged seventy-six years.

Correction.—On page 402 of the News of April 9th, the words following the name of J. Solis-Cohen on the second line of the first column should read: "All the cases in which tracheotomy is indicated do not do as well by intubation as by tracheotomy."

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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